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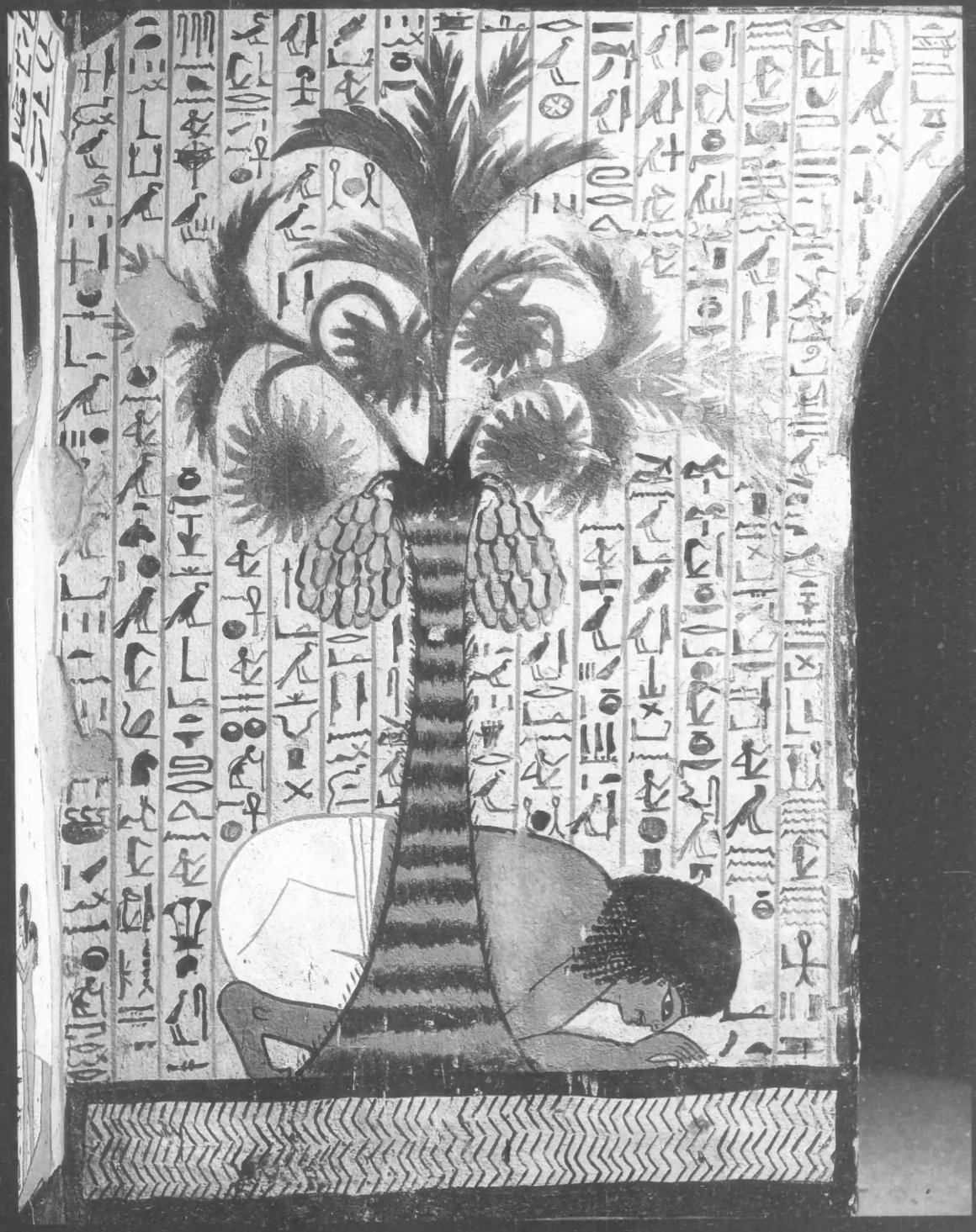
SEPTEMBER 1988 — 9 French francs

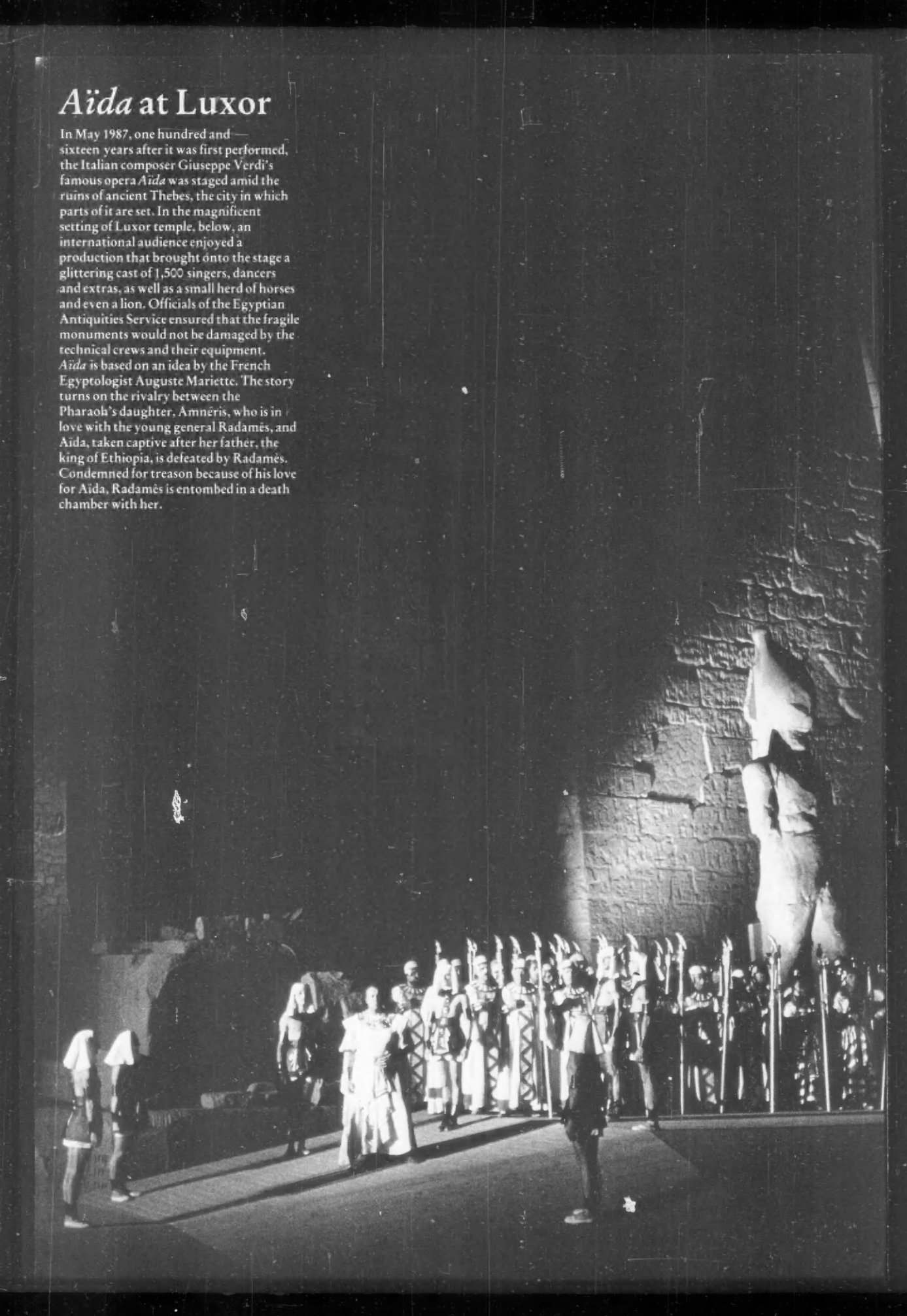
Egypt of the Pharaohs



Aïda at Luxor

In May 1987, one hundred and sixteen years after it was first performed, the Italian composer Giuseppe Verdi's famous opera *Aïda* was staged amid the ruins of ancient Thebes, the city in which parts of it are set. In the magnificent setting of Luxor temple, below, an international audience enjoyed a production that brought onto the stage a glittering cast of 1,500 singers, dancers and extras, as well as a small herd of horses and even a lion. Officials of the Egyptian Antiquities Service ensured that the fragile monuments would not be damaged by the technical crews and their equipment.

Aïda is based on an idea by the French Egyptologist Auguste Mariette. The story turns on the rivalry between the Pharaoh's daughter, Amnéris, who is in love with the young general Radamès, and Aida, taken captive after her father, the king of Ethiopia, is defeated by Radamès. Condemned for treason because of his love for Aida, Radamès is entombed in a death chamber with her.



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Cover: Wall painting from the tomb of Pashedu at Thebes (19th Dynasty, c. 1307-1196 BC) shows the deceased drinking from a lake in the shade of a palm tree.
Photo © G. Dagli Orti, Paris

Back cover: burial chamber of Merneptah (c. 1224-1214 BC), thirteenth son and successor of Ramesses II.
Photo B. Brake © Rapho, Paris

The Courier
A window open on the world 41st year

Published monthly in 35 languages **English French Spanish Russian German Arabic Japanese Italian Hindi Tamil Hebrew Persian Dutch Portuguese Turkish Urdu Catalan Malaysian Korean Swahili Croato-Serb Macedonian Serbo-Croat Slovene Chinese Bulgarian Greek Sinhala Finnish Swedish Basque Thai Vietnamese Pashto Hausa**

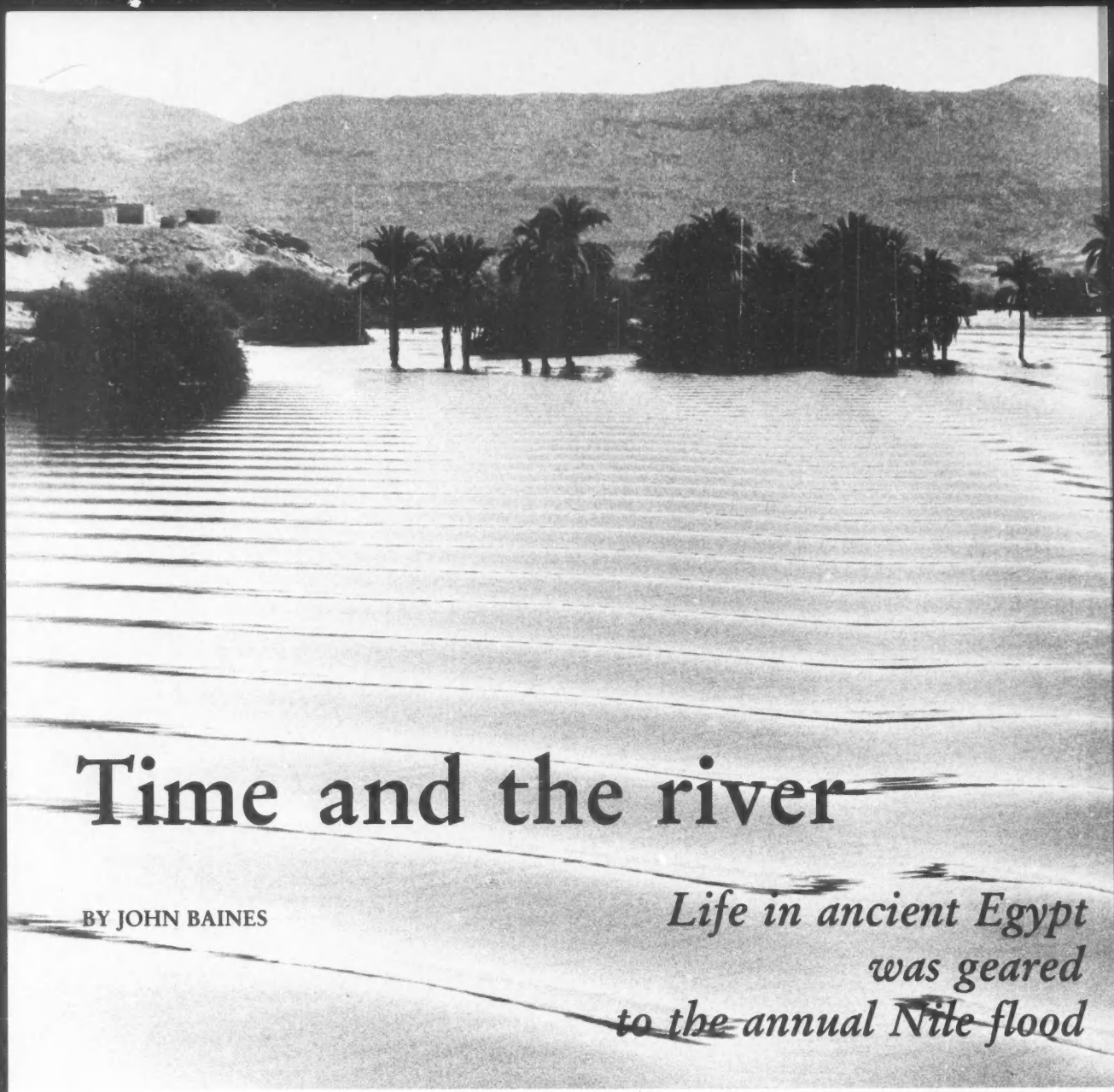
Photo G. Giansanti © Sygma, Paris

editorial

Long ago, the scholars and travellers of Antiquity were fascinated by the Egypt of the Pharaohs. Today, almost 200 years after modern archaeological study of ancient Egypt began, that fascination is still as potent as ever. Egyptology is a constantly expanding field of study in which specialists patiently try to reconstruct a rich and still in many ways baffling civilization from records remarkably preserved in the dry air and desert sands. The record-breaking crowds which flock to international exhibitions of ancient Egyptian art show that a vast non-specialist public is today eager to know more about ancient Egyptian culture. Meanwhile, the giant pyramids and lavishly decorated tombs and temples of the Nile Valley, the messages of hieroglyphs carved in stone or written on papyrus, have also created a vision (not always historically accurate) of ancient Egypt which has stimulated the imagination of artists, architects, writers and musicians down the centuries.

This issue of the *Unesco Courier* retraces some of the steps in the rediscovery of Pharaonic Egypt in modern times and evokes some of the grandiose achievements of ancient Egyptian architecture and engineering. But above all it seeks, in the light of the latest findings by Egyptologists, to show through the more homely and intimate aspects of their lives how the ancient Egyptians saw themselves and their world; the pattern of daily life and work; the rhythm of the seasons dominated by the annual inundation of the Nile; the strange, complex and ubiquitous figures of the Egyptian pantheon; attitudes to the afterlife. The picture that emerges is one of a society in which the sacred and the sublime were totally integrated into the tissue of everyday life, a civilization in which the earthly, the ephemeral, and the eternal were uniquely blended. This harmony is perhaps most clearly seen in ancient Egyptian art which, with its minute attention to detail, its gift for conveying the most subtle nuances of expression and movement, provides a vivid panorama of a people, time and place in which all aspects of earthly experience—farming, family life, the enjoyment of transient pleasures—were sacred activities forming part of cosmic processes.

This issue comprises 40 pages and a 4-page advertising insert between pages 2-3 and 38-39.



Time and the river

BY JOHN BAINES

Life in ancient Egypt was geared to the annual Nile flood

WITHOUT the Nile, which flows north from the Ethiopian highlands and Central Africa to the Mediterranean, Egypt with its negligible rainfall would have been almost completely inhospitable. Because of the river, it was the largest and most prosperous East Mediterranean State from 3000 BC until the Roman conquest in 30 BC. It regained this pre-eminence in the Middle Ages, and remains the most important and populous country in the Near East. There is true continuity over this enormous period, because Egypt's boundaries have changed little.

Throughout Antiquity, the country's standing relied on its agricultural wealth and hence on the Nile; yet agriculture was not the original basis of subsistence, but evolved with the land in prehistory. As well as governing material potential, the Nile and other geographical features affected political developments and played a part in Egyptian ideas.

In the Pleistocene era, which ended around 10,000 BC, Egypt was part of the eastern Sahara, which was inhabited by nomadic hunter-gatherers. The region was rather less arid than at present and supported people in areas now without resources or population. The Nile, whose Valley and Delta were largely swamp, was privileged as a reliable water source, attracting game and people, and being exploited for its plants and fish. By 12,000 BC people also gathered wild grasses, presumably for their cereal grains, which needed more processing than other foods they consumed. This suggests that pressure on food resources was increasing.

In succeeding millennia the Sahara slowly dried, becoming by 2000 BC almost as arid as it is now. From 10,000 to 5000 BC, late Stone-Age people gathered where there was water, exploiting resources ever more intensively, both in the desert and near the Nile. The culture of the region was uniform, unlike that of later small-scale peasant societies. The transition to crop-growing occurred either near water in the desert or in the Nile Valley and Delta. Dates of 7000-5000 BC have been suggested for both, much later than in Western Asia. Because the Nile Valley preserves little evidence for farming, it may have been present earlier than can be documented.

The Nile Valley and Delta were opened up gradually for agriculture and population increased. By 4000 BC there were only two

Photo © Almasy, Paris

◀ The Nile in flood. The annual inundation transformed the Nile Valley into a green ribbon of cultivation bordered by deserts.

Photo © Bulloz, Paris. Musee Guimet d'Histoire Naturelle, Lyons

Pink-veined breccia statuette of a bearded man, ▶ 50 cm high, was fashioned in the Nile Valley by a craftsman of the Naqada I culture which developed in Predynastic Egypt in the 4th millennium of the pre-Christian era.

principal cultures in Egypt, the older Merimda culture in the Delta and the Badarian, centred on Asyut in Upper Egypt. Before 3100 BC the single Egyptian State had formed—the first large nation State.

Egypt continued to develop and population increased until Roman times. Important factors in this process were unity and political stability, and the possibility of cultivating ever more fertile land. In this internal expansion the harnessing of the Nile was crucial. Crops could be planted after the annual inundation, which covered the Valley and Delta from late July to September; they needed minimal watering and ripened from March to May. Some management of the inundation to improve its coverage of the land and to regulate the period of flooding increased yields, while drainage and the river's slow deposition of silt extended the fields. Vegetables grown in small plots needed irrigating all year from water carried by hand in pots; not until 1500 BC was any artificial water-lifting device introduced. Some plants, such as date palms, whose crops ripened in the late summer, drew their water from the subsoil and needed no other watering.

It is uncertain how early and how far this regulation of the inundation and small-scale watering shifted toward full-scale irrigation. By the Middle Kingdom (c. 2040-1640 BC) basin irrigation, in which large sections of the floodplain were treated as single units, was well established, but it may not have been present in the Old Kingdom (third millennium BC), when the great pyramids were built.

Egyptian texts say little about irrigation and provision of water, making it difficult to establish when techniques were introduced. Exceptions are autobiographies of local leaders of the troubled First Intermediate Period (c. 2134-2040 BC), who claimed that they built canals and supplied water to their people when others had none. In more prosperous times such matters may have been taken for granted or not thought prestigious enough to be described in public texts. The only area where there was major irrigation work before Graeco-Roman times was the Faiyum, a lakeside oasis to the west of the Nile south of the Delta apex. Here Middle Kingdom kings reclaimed land by controlling the water flow down a side river channel and directing it away from the lake to low-lying land. Their constructions did not last.

The Nile's annual inundation was quite reliable, and the floodplain and Delta were uniquely fertile, making Egyptian agriculture the most secure and productive in the region, while stability allowed storage against scarcity. This situation was, however, only relatively favourable. Crop failure due to poor floods, population loss through disease, and other hazards, restricted the pace of growth and—unlike modern Egypt—only one main crop was grown per year. High floods could be very destructive.

The principal crops were cereals, emmer wheat for bread, and barley for beer. These made up the staple diet and were easily stored. Other vital plants were flax, which was used for products from rope to the finest cloth and was also exported, and papyrus, a swamp plant which may have been cultivated or gathered wild. Papyrus roots could be eaten, and the stems were used for making anything from boats and mats to the characteristic Egyptian writing material with the same name as the plant; this too was exported. In addition, a wide range of fruit and vegetables was cultivated. Meat from livestock was relatively unimportant in the diet,

but birds were hunted in the marshes and the Nile produced much fish, which was the main animal protein for most people.

Apart from making agriculture possible, the Nile was the chief means of communication. In the Egyptian script words for travelling are written with signs of ships. Heavy loads were taken by river and the ease of water transport helped the country's integration, while the complex geography of the Delta and its mouths were obstacles to invasion. Travel into the desert or to Asia was incomparably more difficult than movement within Egypt. The river could also separate people. The image of a poor man was someone who had no boat, whom the more fortunate should ferry across. Dying was "coming in to land" on the "other side", and the passage into the next world was a "crossing".

The compactness of Egypt, centred on the Nile, favoured political unity, which brought both potential for exploiting the land's fertility and obligations on rulers. Rulers controlled agricultural resources through ownership of land, taxation of its produce, administrative measures to ensure that it was cultivated, and compulsory labour. In return for control, they were responsible for storage and for provision against failures, so that they took upon themselves much that is achieved through co-operation in small societies. The central organization that grew in the third millennium BC created a disciplined labour force which was used to build vast royal monuments and élite tombs, for the fortifications and pyramids of the Middle Kingdom, for the imperial expansion, temples and private tombs of the New Kingdom (c. 1550-1070 BC), and for building and other activities of the Graeco-Roman period.

Organization and the productivity of inundation agriculture made all this possible, temporarily releasing many from the land during the slack summer months in the fields, or permanently freeing people to follow specialized and élite occupations. When central control collapsed, chiefly in the three Intermediate Periods, few monuments were constructed and there was little political expansion, but the agricultural basis of power and prosperity was not destroyed; after reunification monumental projects and general culture revived. One should not, however, forget that for most people this use of labour made available by productivity was not a personal benefit, but served the rulers and the élite. Were it not for political

Detail from scene in relief on the limestone ceremonial mace head of King "Scorpion" (so called from the sign of a scorpion near his face). The king is shown digging the first trench at a temple-founding ceremony. Late Predynastic Period (c. 3000 BC).

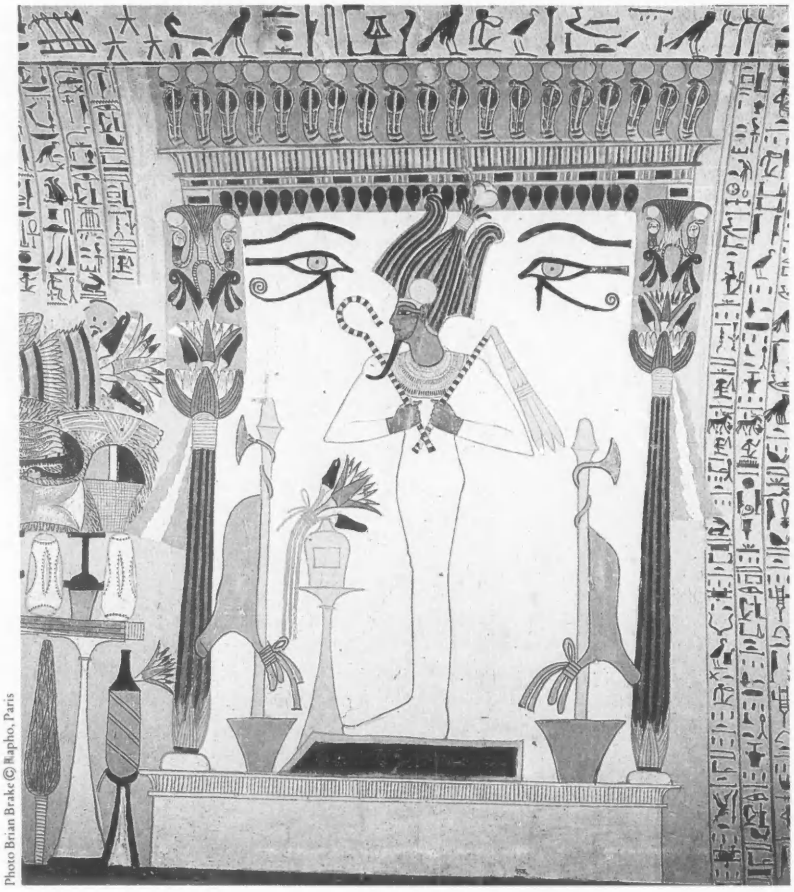


Photo Brian Brake © Rapho, Paris

The god Osiris, ruler of the netherworld, is depicted in this painting from the tomb of Sennedjem at Thebes. The crook and flail he is holding allude to the god's ancient links with the kingship and with pastoralism. The tomb dates from the reign of Sethos I (c. 1306-1290 BC). (See also photo page 24.)

Carving of the ram-headed god Khnum, from the Small Temple of Abu Simbel. Patron of the First Cataract with its mythical caverns which were considered to be the sources of the Nile inundation, Khnum was worshipped chiefly in the area around Elephantine in Upper Egypt.

Photo © Cairo Documentation Centre

Photo © Ashmolean Museum, Oxford

instability, the lot of many could have been as good or better in the Intermediate Periods (c. 2134-2040 BC, 1640-1532 BC, 1070-712 BC), but here beliefs about king and country may have affected their outlook.

The Nile, which was so fundamental to the country's life, was surprisingly unimportant in religion. The Egyptians took their environment for granted as the centre of the world. There was no special name for the Nile, which was simply the "river"; the word "Nile" may not be Egyptian in origin. The bringer of water and fertility was not the static river but its inundation, called Hapy, who became a god. Hapy was an essential image of abundance, but he was not a major god. Both kings and local potentates likened themselves to Hapy in their prosperity and provision for their subjects. A hymn to Hapy dwells on the inundation's bountiful nature but does not relate him to the rest of the gods, as was done in the praise of other deities. He was not depicted as a god but as a fat figure bringing the produce of abundance to the gods. He had no temple, but was worshipped annually at the start of the inundation with sacrifices and hymns at Gebel el-Silsila, which was probably a prehistoric frontier, where the hills come close to the river north of Aswan.

In some other respects the Nile and the inundation were central to the Egyptian world view. Unlike most peoples, the Egyptians oriented themselves to the south, from which the river came, so that the west was on their right—with the result that it was the "good" side for passage into the next world. The year and calendar were determined by the Nile and by the stars. New Year was in mid July, when the river began to rise for the inundation; this coincided with the reappearance of the star Sirius, Egyptian Sothis, in the sky after seventy days' invisibility. The river defined three seasons of four months, "Inundation", "Emergence" (November-March) when the land reappeared and could be cultivated, and "Heat" or "Harvest", when crops were gathered and the water was lowest.

The major god most closely connected with the Nile was Osiris. In myth Osiris was a king of Egypt who was killed by his brother Seth on the banks of the river and cast into it in a coffin. His corpse was cut into many pieces. Later, his sister and widow Isis succeeded in reassembling his body and reviving it to conceive a posthumous son, Horus. Osiris, however, did not return to this world but became king of the underworld. His death and revival were linked to the land's fertility. In a festival celebrated during the inundation, damp clay models of Osiris were planted with barley, whose germination stood for the revival of the land brought by the flood, so that Osiris, the river and the land were drawn into a complex of ideas about fertility and rebirth.

Another important god linked to the river was Khnum the "Lord of the Cataract", the ram god of Elephantine at the southern frontier. Khnum was a creator god and the patron of the point where the inundation entered Egypt. This connection was, however, secondary, supplementing an ancient local cult of the goddess Satis, whose temple celebrated the conjunction between Sothis and the inundation; despite the later arrival of the inundation in more populous areas further north, the conjunction was observed and recorded at Elephantine.

The Nile's fundamental importance may be more evident to us than to the ancient Egyptians, who were so accustomed to it that they termed rain in other countries an "inundation in the sky". In order to appreciate its position in Antiquity, one must see it through ancient eyes with ancient distinctions between sacred and secular, divine and human. The Egyptians had a matter-of-fact attitude to the river, whose inundation could be destructive but was a beneficent moral force in their lives; most gods were more complex beings whose abode was outside the normal world. It was left to the Greeks and Romans to make the Nile a god like the other rivers of their world. ■

JOHN BAINES, *of the United Kingdom, has been Professor of Egyptology at the University of Oxford since 1976. He is the author with Jaromir Málek of the* Atlas of Ancient Egypt *(1980), which has been translated into many languages, of* Fecundity Figures *(1985), which includes a study of the personification of the inundation of the Nile, Hapy, and of articles on Egyptian religion, kingship and other subjects. He has lectured on ancient Egypt in Africa, Europe, and the United States.*

The riddle of the Rosetta

Scholars and adventurers who rediscovered a forgotten civilization

BY JEAN VERCOUTTER

ON 27 September 1822, the French scholar Jean-François Champollion read out to the members of his country's *Académie des Inscriptions et Belles-Lettres* his celebrated *Lettre à M. Dacier, relative à l'alphabet des hiéroglyphes phonétiques employés par les Egyptiens*, a text which marked a turning-point in the rediscovery of ancient Egypt.

The civilization of the Pharaohs, with its grandiose monuments and the exotic facets of its religion, has always inspired curiosity and wonder. The writings of Herodotus, of Diodorus of Sicily, of Strabo and of Petrarch were rich in detail of the way of life and the religious practices of the ancient Egyptians.

However, in the fourth century AD, Christianity became the religion of the Roman Empire and, in 391, Theodosius I closed all pagan temples. The Egyptian priests, who were the only teachers of hieroglyphic writing, gradually died out, and with them died all knowledge of the art. By the sixth century, no one could read the texts inscribed on monuments or written on papyrus.

It was not until the seventeenth, and more particularly, the eighteenth century that inquisitive travellers reawakened interest in

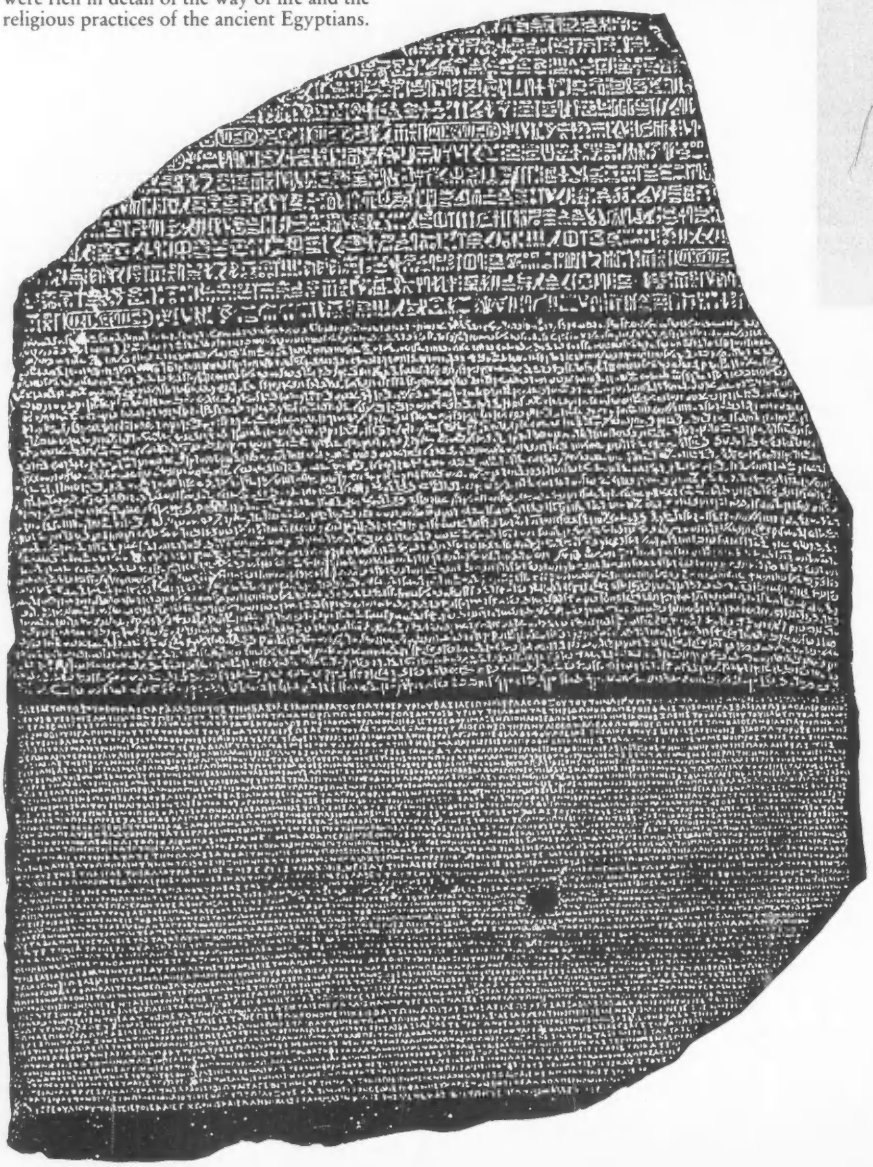


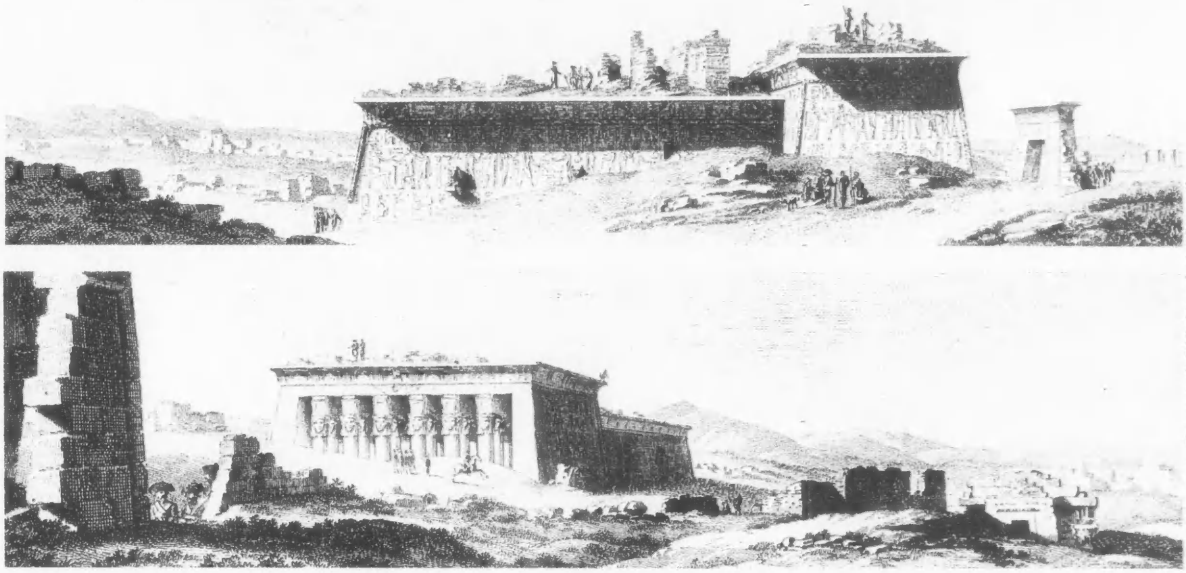
Photo © Artephot, Paris. Bridgeman, London. British Museum

Photo © Jean-Loup Charmet. Musée Carnavalet, Paris

◀ **Discovered near the mouth of the Nile by an officer of Napoleon's army in 1799, the Rosetta Stone, left, was the key to understanding the long-forgotten language of ancient Egypt. It bears the text of a decree by Egyptian priests to commemorate the crowning of Ptolemy V Epiphanes, King of Egypt from 205 to 180 BC, written in three different scripts: hieroglyphic at the top, demotic (the popular language of Egypt at that time) in the middle, Greek at the bottom. One of the pioneers of the decipherment of the hieroglyphic script was the French scholar Jean-François Champollion (1790-1832), shown above in an anonymous 19th-century portrait. He was the first to establish an entire list of hieroglyphs and their Greek equivalents, providing a basis for the translation of all Egyptian hieroglyphic texts.**

Stone

Napoleon's Egyptian expedition of 1798-1799 was accompanied by a team of scholars whose mission was to study and record all aspects of Egypt, ancient and modern. The team produced a multi-volume work, the *Description de l'Egypte* (1809-1830), which contributed to Europe's growing interest in Egypt. Illustrations from the *Description*, below, are views of the temple complex at Dendara in Upper Egypt drawn by the French engraver Vivant Denon (1747-1825), who accompanied the Egyptian expedition.



Photos © Jean-Loup Charmet, Paris. Bibliothèque des Arts Décoratifs

Egypt, its monuments and its mysterious writing. The works of Benoit de Maillet and Claude Sicard, and Constantin François de Volney's *Voyage en Syrie et Egypte* (1787; "Travels Through Syria and Egypt"), furnished details of the geography of the country and of its great temples, while Vivant Denon's sketches made the face of Egypt known to Europeans.

Denon was an attractive personality who lived a very full life. After serving as a gentleman-in-waiting to Louis XV and then as embassy secretary at St. Petersburg and Naples under Louis XVI, he persuaded Napoleon to allow him to join his expedition to Egypt in 1798, "despite his age" (he was then fifty!). Appointed Director of Museums by Napoleon on his return from Egypt, he created the *Musée Napoléon*, now the Louvre Museum.

Vivant Denon's *Voyage dans la Basse et la Haute Egypte* ("Travels Through Upper and Lower Egypt") marked the beginning of a rebirth of interest in ancient Egypt. Published in Paris in 1802, it was a runaway success throughout Europe. It ran to forty successive editions and was translated into English and German.

Denon had accompanied General Desaix's detachment to Upper Egypt where, often at risk of his life and sometimes bearing arms himself, he sketched all the Pharaonic monuments he came across. The charm of his evocative drawings fuelled the "Egyptomania" that was rife both among the educated élite and the general public. Egyptian-style furniture and knick-knacks proliferated and—an unexpected consequence this—the theft of antiquities soared.

Vivant Denon's book was followed shortly afterwards by *Description de l'Egypte*, a massive work consisting of nine volumes of text and eleven large tomes of maps and illustrations. This was the work of the 150 scholars who accompanied Napoleon to Egypt; it was published between 1809 and 1830. In 1822, however, the riddle of the hieroglyphs with which the walls of many Egyptian monuments were covered remained unsolved and the real story of Egypt of the Pharaohs remained shrouded in mystery.

In August 1799, during the preparation of earthworks near Rosetta (Rashid), to the east of Alexandria, an officer of Napoleon's army noticed a stone of black basalt covered with inscriptions. His superior, General Menou, had the stone taken to Alexandria and showed it to the scholars accompanying the expedition. The stone was inscribed with three texts. The one at the top was in hieroglyphic characters, the middle one in characters that looked somewhat like Arabic writing, and the one at the bottom in Greek characters. Since several of the scholars knew Greek, they were immediately able to read the bottom text, a decree dating from 196 BC, during the reign of Ptolemy V. Deducing, correctly, that these were three versions of the same text, they realized that they had in their hands a potential key to hieroglyphic writing.

The scholars took rubbings and made several copies of the inscriptions. This was fortunate, since, on the surrender of the French forces, the British seized the "Rosetta Stone" as war booty. It is today in the British Museum, London.

News of the discovery of the Rosetta Stone spread quickly throughout Europe, and there began a fiercely competitive race to be the first to decipher the mysterious writing.

Jean-François Champollion was the most fervent, and also the youngest, of these competitors. Born at Figeac in southwest France in 1790, he grew up in a milieu in which Egypt was a consuming passion. His brother, Jacques-Joseph Champollion, who had been unable to take part in the expedition to Egypt, was secretary to the mathematician, Egyptologist and Prefect of the Isère *département*, Joseph Fourier. Fourier had been among the scholars who had accompanied the Egyptian expedition and on his return to France he wrote the lengthy historical preface to the *Description de l'Egypte*.

Brought up in contact with two such men, Jean-François himself became passionately interested in Egypt. On seeing a copy of the Rosetta Stone inscriptions he vowed that he would be the first to decipher the hieroglyphs. At the age of thirteen, with this objective in mind, he not only learned Latin and Greek but also Hebrew, Arabic, Syriac and Aramaic. In addition, at the age of seventeen, he also acquired Persian and Coptic, for he had become convinced that Coptic was, in fact, ancient Egyptian transcribed in Greek characters.

In 1821, after some misadventures result-

ing from dabbling in politics, Champollion settled in Paris near his brother who was now secretary to Bon Joseph Dacier, a Hellenist and Perpetual Secretary of the *Académie des Inscriptions et Belles-Lettres*. He devoted himself wholly to his research whilst keeping an anxious eye on the progress of his rivals, the English physicist Thomas Young, his compatriot Sylvestre de Sacy and the Swede Johan David Akerblad, all of whom were attempting to unravel the secret of Egyptian writing.

Like Champollion himself, they were all faced with the same conundrum. Was Egyptian writing ideographic or phonetic? In other words, did each character represent an idea or a sound? On 14 September 1832, Champollion had the sudden intuition that Egyptian was both ideographic *and* phonetic. With the help of the Rosetta Stone and copies of inscriptions from other monuments sent to him from Egypt by friends, he succeeded in deciphering the names of Greek and Roman rulers: Alexander, Cleopatra, Arsinoe, Augustus, Nero, and so on. With these names as a starting point he succeeded in deciphering the basic alphabetical characters; and from the names of the Caesars and the Ptolemies he went on to unravel those of the Egyptian Pharaohs—the Ramesses and the Tuthmosis Dynasties. Gradually increasing the number of hieroglyphic characters he could recognize at each stage of his research, he ended up by being able to read them all. By working at ever longer texts he finally mastered the Egyptian language.

Despite the jealousy that his discoveries aroused, his achievement gradually gained recognition. With the backing of some high-ranking members of the court, he was nominated Curator of the Egyptian collections at the Louvre Museum. In 1827 he achieved the ambition of his life when he was entrusted with a mission of exploration in Egypt. Setting out in 1828, accompanied by a number of excellent artists, such as Nestor L'Hôte, and a team of Italians led by his pupil and friend Rossellini, he spent fifteen months scouring the valley of the Nile from Alexandria to Aswan, stopping for a time at Abu Simbel and going as far as the Second Cataract. He was able to write with pride to his patron Dacier: "I can now inform you that no changes will be necessary in our *Lettre sur l'Alphabet des Hiéroglyphes* ("Paper on the Hieroglyphic Alphabet"); our alphabet is correct and holds equally good (...) for the inscriptions on all the temples, palaces and tombs of the Pharaonic epochs."

Whilst Champollion and his rivals were hard at work deciphering the hieroglyphics, the first effect of the "Egyptomania" which had become the rage with the publication of Vivant Denon's book and the *Description de l'Egypte* was to arouse the covetousness of collectors, and in particular of the great European museums, all of which wanted their own collection of Egyptian antiquities. Furthermore, scores of adventurers were attracted to Egypt in the hope of making a quick fortune.

Egypt was, in theory, under the sovereignty of the Sultan of Constantinople, but, in fact, the Viceroy, Mehemet Ali, ruled the country as an absolute monarch. Mehemet Ali wanted to modernize the country and had little interest in antiquities. As a result, taking advantage of their privileged diplomatic status, the foreign consuls obtained from him the necessary permits to carry out archaeological excavations and take away ancient monuments. They recruited agents amongst adventurers, whom they engaged to carry out excavations in their name and to bring back the antiquities discovered or bought. It was in this manner that a number of important collections were constituted.

The Italian diplomat and collector Bernardino Drovetti, who was French Consul General in Egypt between 1810 and 1829, took advantage of his long tenure to indulge in some profitable trafficking in antiquities, at times directing the search for them himself. His agents pillaged sites unscrupulously, especially in the area of Thebes. He offered a first collection to Louis XVIII, but the French monarch found the price too high. It was acquired by the king of Piedmont and the Museum of Turin thus became the owner of the first Egyptian collection of high quality.

Encouraged by this, Drovetti put together a second collection which, on Champollion's advice, Louis XVIII's successor Charles X bought for the Louvre Museum. He then built up a third collection which was bought by the king of Prussia in 1836. Not so large as the other two, it was nevertheless very fine.

Appointed British consul in 1816, the artist Henry Salt followed Drovetti's example. He too assembled three successive collections. The first was bought by the British Museum, except for its finest piece—the alabaster sarcophagus of Sethos I—which was sold to a private collector for the same price as all the rest of the collection. The second and much more important collection was acquired by Charles X in 1824. Thanks to the combined collections of Salt and Drovetti, the Egyptian department of the Louvre became the equal of that of the Museum of Turin. Salt's third collection was sold after his death, the major part of it going to the British Museum.

These outstanding collections could never have been put together without the untiring efforts of the consuls' agents, notably the Frenchman Jean-Jacques Rifaud, who worked for Drovetti, a Greek named Giovanni d'Athanasi, and above all the extraordinary Italian Giambattista Belzoni, who acted for Salt. Born in Padua, Belzoni had considered becoming a monk when he was twenty, but instead he went to England where, as a circus entertainer, he astonished the public with his incredible feats of strength. Later he turned up in Portugal, in Spain, in Malta and finally in Egypt. There he perfected a hydraulic pump of his own invention for use in irrigation, but the venture was not a success as Mehemet Ali refused to buy it. Penniless, he was recommended to Salt who took him into his service. Evidence of his astuteness and prodigious strength abounds in the narrative he left of his *Travels in Egypt and Nubia*, during which he gathered antiquities for Salt.

Champollion's discoveries, and the publications to which they gave rise, were to form the basis of the training of the first Egyptologists, among whom were some outstanding figures.

Karl Lepsius, who studied at the *Collège de France*, learned to read hieroglyphs from posthumously published works by Champollion. From 1842 to 1845 he headed a great expedition to Egypt organized by the king of Prussia. Appointed to a profes-

The French Egyptologist Auguste Mariette (1821-1881) made his name with the excavation of the Serapeum, a temple at Saqqara (Memphis) which was originally the necropolis of the Apis bulls, sacred animals of the god Ptah. The subterranean chambers of the temple, which Mariette entered in 1851, yielded the mummies of 64 Apis bulls. This engraving made in 1858 shows a newly excavated gate of the Serapeum.

This granite bust of Ramesses II (c. 1290-1224 BC) is the sole remaining part of a great colossus of the king from his vast mortuary temple, the Ramesseum, on the west bank of the Nile at Thebes. Drawing of the sculpture being dragged to the river was made in 1816 by the Italian gatherer of antiquities Giambattista Belzoni, who had been commissioned to organize its removal to the British Museum.

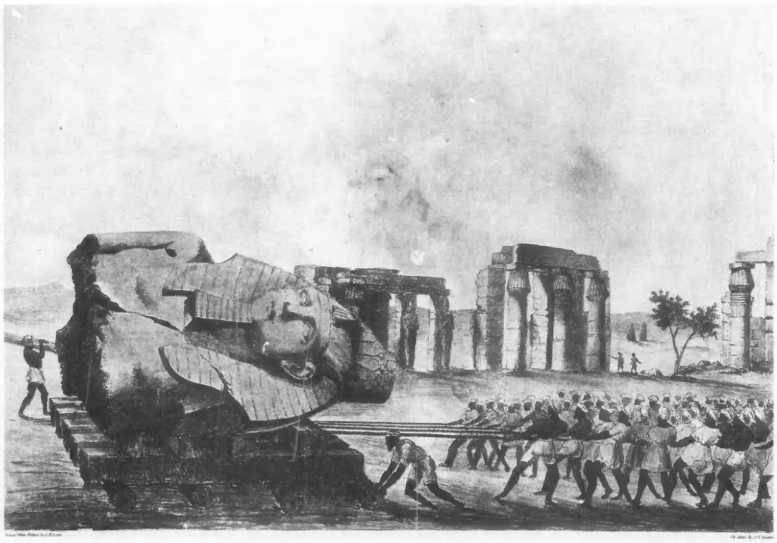


Photo © British Museum Publications, London

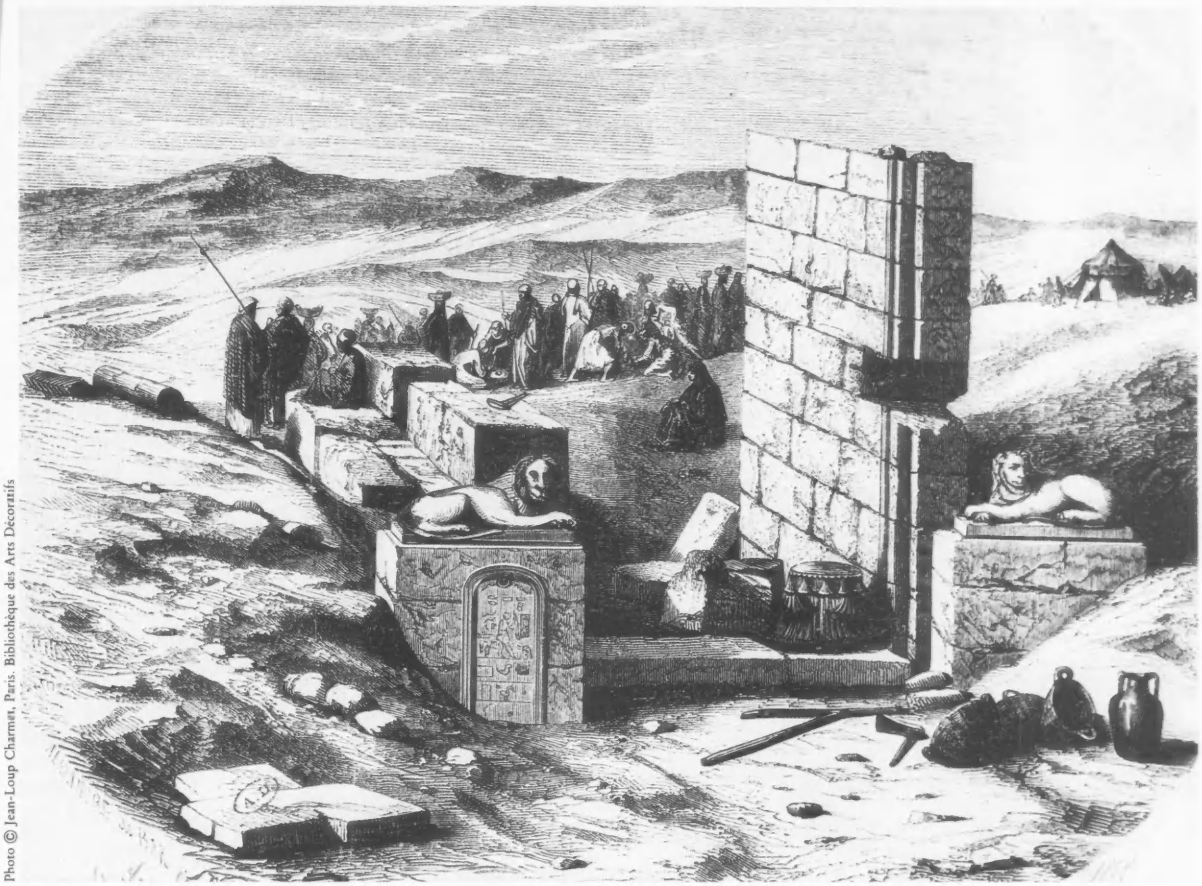


Photo © Jean-Loup Charmet, Paris. Bibliothèque des Arts Décoratifs

sorship at the University of Berlin, he was the father of German Egyptology. His major work, *Denkmaeler aus Aegypten und Aethiopien* ("Monuments of Egypt and Ethiopia") describes all the monuments of the Nile Valley from the Fourth Cataract to the Mediterranean.

John Wilkinson can, perhaps, be considered the father of British Egyptology. Abandoning a military career, he settled in Egypt where he undertook archaeological digs for more than ten years. In his *Manners and Customs of the Ancient Egyptians*, he was the first to describe the daily life of the craftsmen and peasants of Pharaonic times as depicted in tomb paintings.

After studying engineering and architecture, the Frenchman Prisse d'Avennes had an adventurous life as a young man. He fought against the Turks in the Peloponnese and then became secretary to the Governor General of India before settling in Egypt where he devoted himself to archaeology. He gave the Louvre the "Royal Chamber", or "Hall of the Ancestors", removed from the temple of Karnak just before Lepsius arrived to take possession of it. He donated to France the "Prisse Papyrus", a long and precious document which dates from 2000 BC and has been described as the oldest book in the world.

Finally, Auguste Mariette ensured the future of the burgeoning discipline of Egyptian archaeology by putting a stop to the traffic in antiquities which had involved quantities of objects, monuments and papyri taken from Egypt either under cover of official permits or as booty from clandestine excavations.

A secondary school teacher at Boulogne-sur-Mer, Mariette was irresistibly drawn to Egypt after seeing the drawings of Nestor L'Hôte. Using Champollion's *Grammaire* he taught himself to read hieroglyphs. Then, after obtaining a modest post at the Louvre Museum, he was sent in 1850 on a mission to Egypt to buy Coptic manuscripts. While waiting for the permits necessary to make these purchases he made a visit to Saqqara. The sight of a few sphinxes, half buried in the sand, reminded him of a text of Strabo which mentioned an avenue lined with sphinxes which led up to the Serapeum, the tombs of the Apis bulls. Abandoning the Coptic manuscripts, he decided to excavate. Uncovering sphinx after sphinx, he traced out the avenue he had discovered and found that it did indeed lead to the Serapeum, where he dug out the enormous sarcophagi of the sacred bulls and everything around them.

This discovery caused a great sensation and earned Mariette an international reputation. But above all, having tasted the joys of working in the field and experiencing the heady intoxication of discovery during the months of feverish exploration, he could no longer do without them. Through the good offices of Ferdinand de Lesseps, the viceroy of Egypt, Said Pasha, entrusted Mariette with the task of protecting the antiquities of Egypt. In 1858 he appointed Mariette to the post of Director of Works for the Antiquities of Egypt and gave him all the resources needed for action. Mariette then began archaeological excavations at Giza, Saqqara, Abydos, Thebes and Elephantine and assembled all his finds in Cairo.

Anxious to protect all the objects and monuments of ancient Egypt, Mariette had the very greatest difficulty in ensuring the application of the necessary measures. Nevertheless, from that time, thanks to his efforts, the foundations of the Egyptian Antiquities Service and of the Cairo Museum were laid. After his death, in 1881, his work was continued by his successor, Gaston Maspero. The way ahead was traced out and was to lead to the great discoveries which would lead to a deeper understanding of Pharaonic Egypt—the secret hiding-place of the royal mummies at Deir el-Bahri, the tomb of Tutankhamun and the royal tombs of Tanis. ■

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Colossal feats of engineering

BY RAINER STADELMANN

The imposing Hypostyle Hall in the Great Temple of Amun, Karnak, begun by Sethos I and completed by his son Ramesses II (c. 1290-1224 BC). The monumental columns, their papyriform capitals supporting colossal architraves at a height of 24 m, show a perfect mastery of construction techniques. ▼

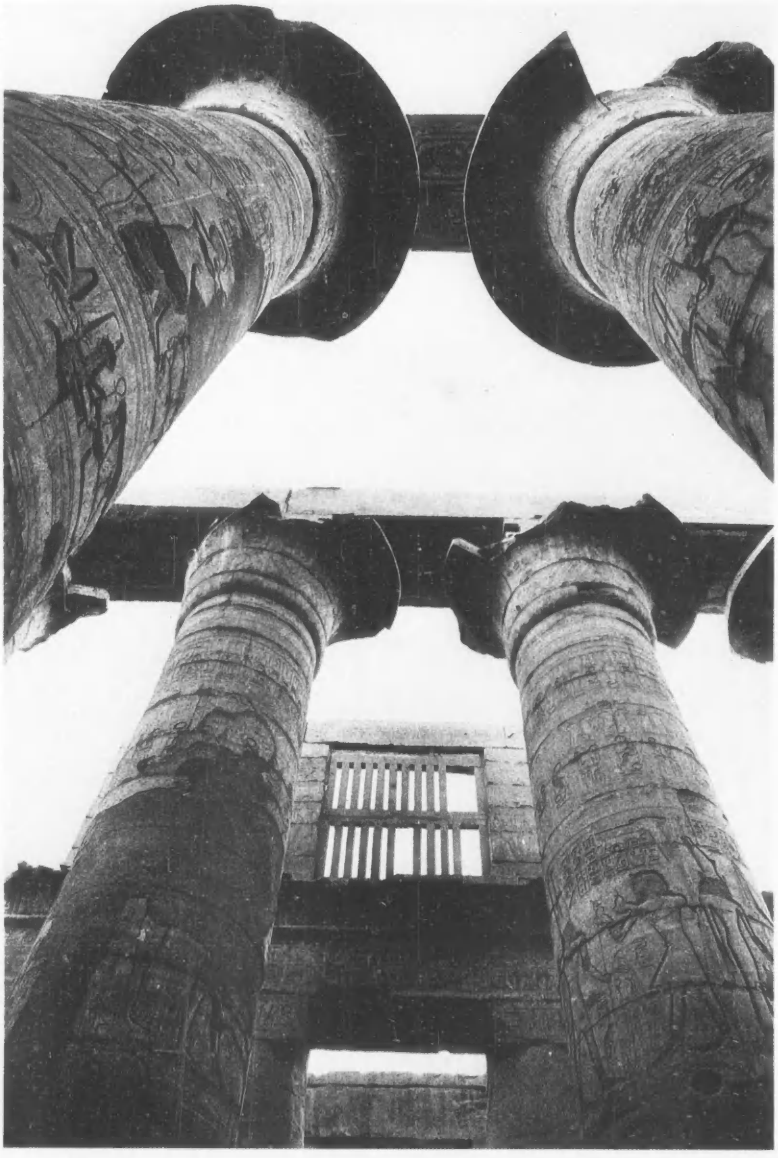


Photo © Jean-Pierre Guillerot, Paris

ANYONE who has ever gazed at the pyramids, if only once in a lifetime, is bound to have wondered how these extraordinary and massive structures were built, how the huge stones were transported, what technical and mathematical knowledge the ancient Egyptians possessed and what tools or machinery they used.

The same questions spring to mind when contemplating the obelisks of Luxor, the Hypostyle Hall at Karnak, and especially the colossi of Memnon, monoliths hewn out of the quarries north-east of Cairo and transported to the city of Thebes 700 kilometres away.

For the ancient Egyptians, technical and scientific knowledge was not a specialized discipline, but formed part of the training and the career of a competent scribe, a man employed in the service of his province or his King. The scribe's education began when he learned the difficult arts of reading and writing, achieved with the help of literary texts but undoubtedly also by means of mathematical and technical works written on papyrus, fewer examples of which have come down to us than works of literature.

A number of common trades were probably organized in family guilds from very early times. There is evidence of specialized crafts in Egypt in Predynastic times in the form of finely crafted pottery and stone tools, stoneware vessels, and metalwork. The goldmines of the Eastern Desert and the copper deposits of Sinai may have been exploited in prehistoric times, and precious stones prospected in the desert valleys of the south-east. In historical times, deposits of rare hard stone were quarried, often at a considerable distance from the Nile Valley. During the Old Kingdom (third millennium BC), the technique of stoneworking was perfected in sculpture, both in low relief and in the round, and culminated in the earliest colossal statues such as the Great Sphinx of Giza or the royal effigies of the Fifth Dynasty (c. 2465-2323 BC).

The soil of Egypt, deposited along the banks of the Nile by the annual inundation so that fields continually had to be marked out afresh, encouraged the development of surveying and hence of mathematical calculations. The rise of the Nile waters and the annual height of the flood were calculated and recorded by means of Nilometers—in the south, on Elephantine island, and in the north, near Memphis—for the height of the

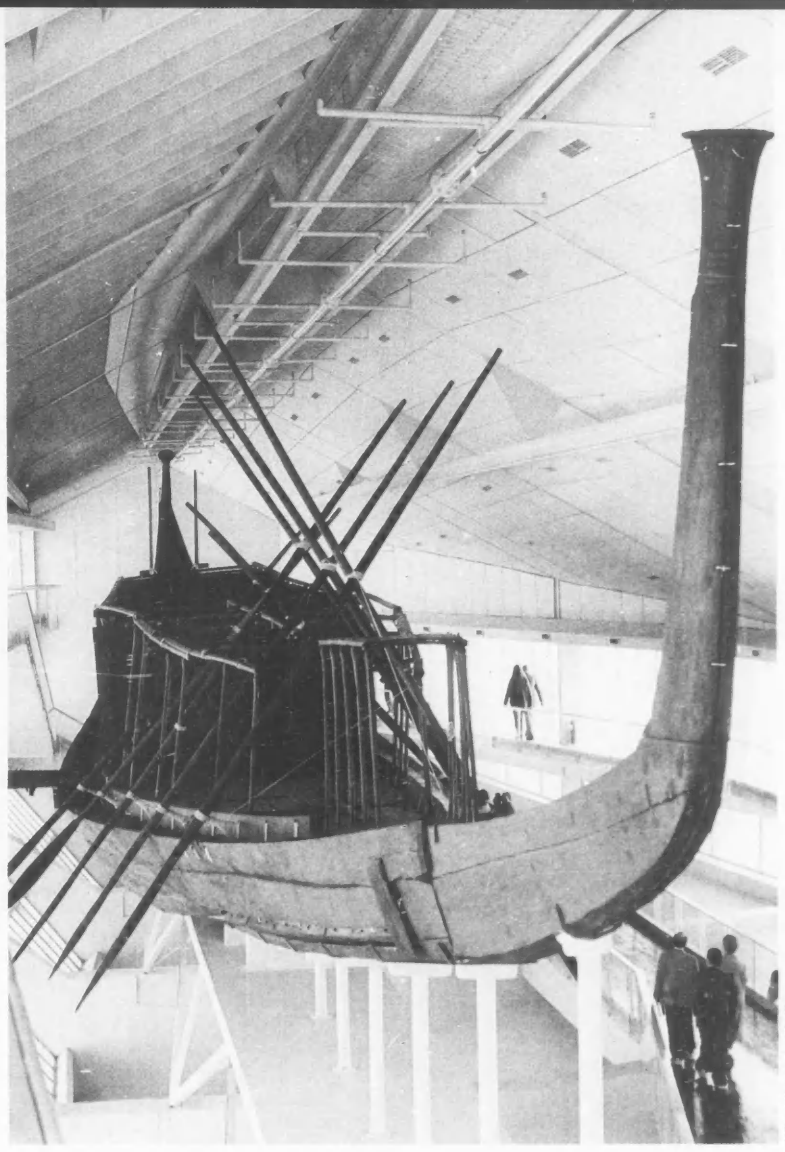


Photo Unesco/A. Khalil

▲ **One of the boats which formed part of the funerary equipment of the Pharaoh Khufu (Cheops, c. 2551-2528 BC) and may have been intended to enable him to voyage in the next world. The cedar craft, over 40 m long, has been reassembled from dismantled sections unearthed in 1954 close to the Great Pyramid.**

waters determined the levying of taxes on the income from different categories of cultivable land, particularly plantations on raised plots. Observation of the relatively regular inundation and its connection with astronomical phenomena led to the invention of an annual calendar geared to the natural rhythm of the seasons, which was a great improvement on the old lunar calendar. Knowledge obtained from agrarian organization and observation of the heavens and the stars laid the theoretical foundations of the future monumental constructions of the Old Kingdom.

The river was also the country's main artery. People travelled up or down the Nile in boats or barges, and in the Delta the branches of the river were used as channels of communication. These waterways were interconnected by canals, and a canal network also linked the settlements bordering the Nile Valley. Even deliveries of goods from one temple to another were carried out by water. Lighter loads, such as sacks of grain, were carried on donkeys over the fields, and from the fields to canal or river. Wheels, which came into current use only under the New Kingdom (c. 1550-1070 BC), were confined to war or hunting chariots. Although these vehicles were used for excursions by the upper classes, they were never strictly speaking a mode of transport. In the Old Kingdom, high dignitaries used litters for short overland journeys, but for longer journeys boats were always the answer.

A royal boat approximately 44 metres long has been excavated to the south of the Great Pyramid of Khufu (Cheops) at Giza. Equipped with five pairs of oars and another huge pair of oars in lieu of a rudder, the boat bore signs of wear and tear indicating that it had actually sailed. It was probably used only to link the royal residence with the neighbouring towns of the Delta, for the craft which plied along the Nile were usually equipped with collapsible masts. When they travelled south, the north wind carried them along, but on journeys north the mast was lowered and the oars were used. There is evidence of navigation on the open sea to the cities of the Phoenician coast from the First Dynasty onwards (c. 3000 BC). Representations of single-masted vessels bearing merchandise from Syria are common in the Fifth Dynasty. Heavy loads were transported on special barges.

The transport by barge of palmiform columns lashed on to sledges is depicted on the southern wall of the entrance to the funerary temple of Unas (c. 2356-2323 BC), the last king of the Fifth Dynasty. The obelisks of Queen Hatshepsut (c. 1503-1482 BC) are shown being carried by barge in the southern portico of the lower terrace of her temple at Deir el-Bahri. The two obelisks lie side by side, the pointed end of one towards the prow of the barge and that of the other towards the stern, held in place by ropes. A fleet of twenty-seven boats tows the barge, which is accompanied by a pilot vessel.

For the transport of the northern colossus of Memnon, weighing some 800 tons, an architect of genius, Amenhotpe son of Hapu, overseer of the Temple of Luxor and of the funerary temple of Amenophis III near Thebes, built a special boat in approximately 1350 BC which he named the "Boat of Eight", a name which seems to signify that it was eight times larger than a normal barge. However, the biggest technical problem must have arisen when the megalith was being loaded on to the barge, and later when it was unloaded at Thebes. We know that

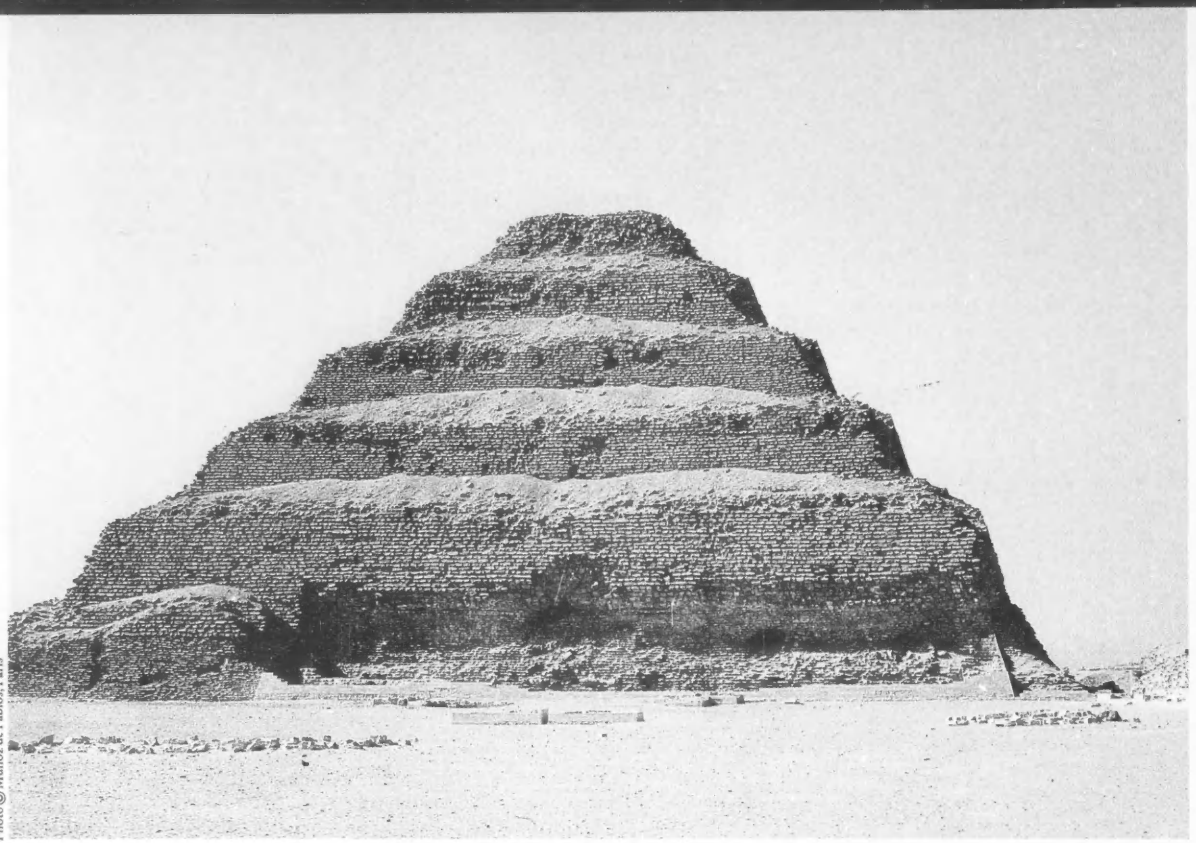


Photo © Muñoz de Pablos, Paris

▲ **The Step Pyramid at Saqqara, last resting place of King Djoser (c. 2630-2611 BC). This six-stepped white limestone monument, 60 m in height, is the earliest stone structure of its size known to the world.**

when obelisks were transported they were hauled down ramps as far as a canal dug specially to connect the quarry to the Nile. A similar process was probably used for the transport of the colossal statue of Memnon. Laden with ballast of stone or brick, the barge would wait, low in the water of the canal. The obelisk or colossus would be heaved on board and lashed horizontally on a sledge, then the ballast would be unloaded, whereupon the barge would rise to the surface and could be towed along.

Over short distances it was possible to haul a load of some 60 tons along a smoothed out track, as is shown by the famous representation of the transport by sledge of a colossal statue of the nomarch[1] Djehutihotpe in his tomb at Deir el-Bersha. The alabaster colossus, 13 cubits high according to the inscriptions, must have weighed as much as this. Wedged in place on an enormous wooden sledge and held down with ropes, it is being dragged along by 172 men, four abreast. Holding a pitcher, a workman perched on the feet of the colossus is pouring water in front of the sledge to make it slide more easily along the clay-coated track.

Obelisks, guided by strong ropes, were probably slid down a ramp built of unfired bricks and sand towards a quadrangular shaft filled with sand. While the obelisk, leaning at an angle, was still held by the ropes, workmen emptied the sand out of the shaft, or the sand was allowed to run out through slots in the walls of the shaft. When, with much careful manoeuvring, the obelisk was set upright on its base, there was a risk of damaging its edges. Above all, its enormous mass might wobble on its plinth and settle off-centre, so that the edges of its base were not parallel to the edges of the plinth. An accident of this kind must have happened to the obelisk of Tuthmosis III at Karnak, although the error of alignment with the plinth was minute and is scarcely visible.

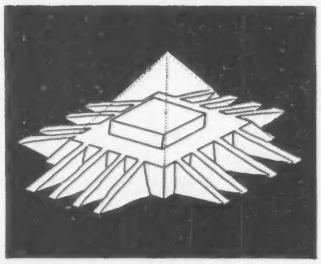
However, the most extraordinary feats were those of monumental construction. As early as the Second Dynasty (c. 2770-2649 BC), Egyptian architects were familiar with vaulting, and used it in the superstructure of tombs and doubtless also in dwellings which have not survived. During the same dynasty, facing stone was increasingly used in brick funerary monuments, and dressed stone blocks were introduced. The crowning innovation, however, took place under King Djoser, towards the beginning of the Third Dynasty (c. 2649 BC) in Saqqara, part of the necropolis of the ancient city of Memphis, with the first stone monumental construction, the Step Pyramid, which took some thirty years to build. The various stages in its construction show how Egyptian architects, in a single generation, gained mastery over the new building material.

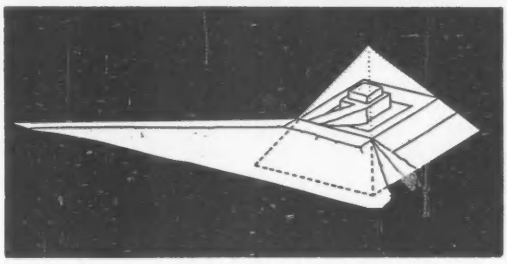
During the first construction phase of the original step mastaba[2], stone seems to have been used exactly as if it were brick. Blocks of stone, designed like large bricks, were arranged in horizontal layers and cemented with crude clay mortar. A different technique emerged in the second phase, marking the change from step mastaba to step pyramid. The mass of the dressed stone blocks was far greater. Each one weighed half a ton. They were arranged with the lie of the stone sloping inwards towards the heart of the edifice at an angle of 18°, so that their outer surface already had the angle of incline of 72° to be found in its final phase in the enlarged pyramid.

The use of large blocks and the sloping arrangement of the rows were brilliant innovations which led to a considerable saving in time and the labour of stonecutting, since it was no longer necessary to chamfer the outer surface of the facing blocks, and the desired angle of incline was more easily obtained. This technique would not be abandoned until the final form of the pyramid was attained during the following dynasty. A steeper inclination of 45° to 54° lent itself to the use of horizontal layers and again made it necessary to chamfer the outer surface of the facing blocks.

The building of a pyramid confronted the State with great technical and administrative problems. The organization of large num-

1. Nomarch: governor of a *nome*, or province.
2. Mastaba: a rectangular tomb with vertical or sloping sides and a flat roof. *Editor*

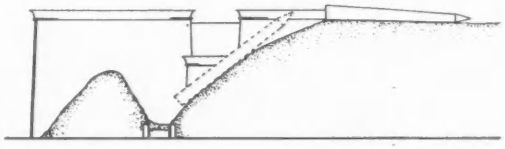


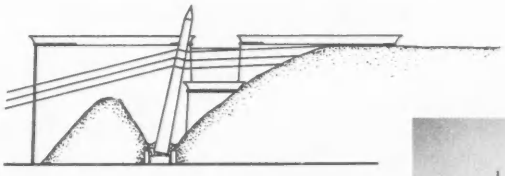


◀ "The hypothesis that a single ramp, perpendicular to one of the faces of the pyramid, could have been used to transport the building blocks to the top of the pyramid and position them has now been superseded. ... The use of a spiralling ramp is difficult to imagine from a technical point of view. ... It is more likely that a number of small ramps (Fig. 1) were built around the pyramid right at the start, so that blocks could be hauled up them to a height of 25 or 30 m. ... Then a larger lateral ramp (Fig. 2), resting against one of the faces, could have been used ..."

The type of level which might have been used to achieve the horizontal alignment of the Great Pyramid. ▼

A method of finding the north by bisecting the angle between the rising and setting positions of a north star. ▶





Illustrations © Rainer Stadelmann

▲ Two drawings showing a technique which may have been used for the erection of obelisks in ancient Egypt. Supported by strong ropes, the obelisk was slid down a ramp of unfired bricks and sand towards a quadrangular shaft filled with sand. The sand was then gradually emptied out of the shaft and the obelisk manoeuvred upright until it stood on its plinth.

bers of workers, prospection for quarries and the extraction of stone, the regular transport of blocks of stone to the stonemasons' yards and their storage, the training of stonecutters, building workers, transport specialists, architects and foremen—all these achievements testify to the impressive administrative system of ancient Egypt.

From the construction of the Step Pyramid of King Djoser to that of the Great Pyramid at Giza (c. 2550 BC), which was numbered among the seven wonders of the world, considerable advances were made in technical and geometrical expertise. Ancient Egyptian funerary monuments are always oriented with extraordinary precision. The orientation of the Step Pyramid shows an average deviation of 3°, but the deviation of the Great Pyramid is no more than 3'6". A perfect orientation was obtained on prelevelled ground by observing the polar stars from a fixed point at the northern corner of the future pyramid. The instruments used were the *merkhet*, a horizontal bar equipped with a plumbline, and the *bay*, a wooden rod with a sighting notch in its upper end. On the arc of a circle, the positions of the rising and setting of a north star were marked. To find true north the Egyptians halved the angle formed by the position of a polar star when it rose, the position of the observer, and the position of the same star when it set. Once true north had been found, a string connecting various fixed points on the north-south

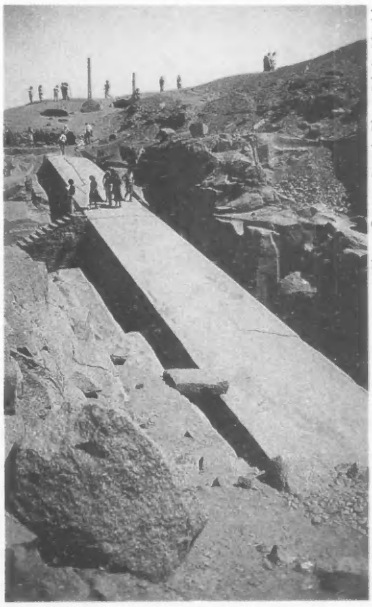


Photo © Hans Patzelt, Photo Schaia, Munich

Unfinished obelisk in a granite quarry near Aswan. Its estimated length and weight are 42 m and 1,200 tons respectively. ▶

Photo: C.R. Bulloz, Paris

◀ **Bronze statuette of Imhotep, chief minister and architect to King Djoser. Imhotep designed the king's tomb as a monumental stairway towards the sky. It was built entirely of stone to last until eternity (see photo page 14). Sage and thinker as well as architect, Imhotep is thought to have written the earliest collections of the maxims or didactic "wisdom texts" which constitute one of the richest genres of ancient Egyptian writing. In the Late Dynastic Period (c. 713-332 BC), some 2,000 years after his death, he was deified as the patron of scribes and as a healer. The Greeks identified him with their god of medicine, Asclepius.**

axis made it possible to determine one side of the pyramid. With the aid of measuring rods, the desired length was marked out. A right angle was obtained by means of a set of protractors. If Pythagoras' theorem on the relationship between the sides of a triangle had not yet been formulated, it was certainly applied in practice.

The precision of the right angles of the Great Pyramid, with an average deviation of only 2' 48", is still, today, worthy of admiration, as is the horizontal alignment of its four corners, with a fractional divergence of 2.1 centimetres. The alignment must have been achieved by means of a level in the form of a large wooden setsquare equipped with a plumbline which hung between its two equal arms joined at a right angle (see drawings p. 15). Connecting these two arms was a horizontal crossbar with a median notch into which the string of the weight fitted when the level was held perfectly horizontal. All other theories, such as that of filling an artificial lake around the pyramid, must be rejected.

There are no ancient descriptions of building methods as such. The reports of Herodotus on this subject are based on information supplied by his contemporaries who, 2,000 years after the building of the pyramids, probably knew no more than we do. Near the pyramids of Maidum and Dahshur, the remains of the ramps used to transport the stone building materials can still be seen today. The hypothesis that a single ramp, perpendicular to one of the faces of the pyramid, could have been used to transport the building blocks to the top of the pyramid and position them has now been superseded. For the Great Pyramid, such a ramp would have been 3.3 kilometres long and its mass would have been 3.5 times greater than that of the pyramid itself. The use of a spiralling ramp is difficult to imagine from a technical point of view, since it would have concealed the four faces of the pyramid and its four corners, making it impossible to control the angles and the slope of the faces.

It is more likely that a number of small ramps were built around the pyramid right at the start, so that blocks could be hauled up them to a height of 25 or 30 metres. By this stage, 50 per cent of the mass was already in place. Then a larger lateral ramp, resting against one of the faces, could have been used to transport stones up to a point near the top of the pyramid. Such a ramp could dispense with half the mass of a free-standing ramp and would also be more stable. In the case of the Great Pyramid, for example, which is 146.6 metres high, 96 per cent of the mass would be in place at a height of 100 metres. The last 20 or 30 metres probably called for a stepped construction. The pyramidion, or capstone, could only have been put in position by means of scaffolding, which indicates that the Egyptians were familiar with pulleys, even if no depiction of this system has survived. The use of simpler leverage devices and sledges has been recorded. Illustrations of irrigation work depict the *shaduf*, a hand-operated weight-arm for raising water. This system may well have been used to lift building materials.

It is remarkable that the greatest scientific, technical and artistic breakthroughs, not only for the history of Egyptian civilization but for the history of humanity as a whole, from the discovery of writing to advances in medicine, evidently took place in the first half of the third millennium BC. The following centuries only built on and perfected this knowledge. No innovations were made to broaden the scientific and technical horizons until the advent of the Greek philosophers in the seventh and sixth centuries BC. ■

A scribe and his assistants measure a field of wheat to determine the taxes to be levied. Painting from the Theban tomb of Menna, a surveyor during the New Kingdom (18th Dynasty). ▼

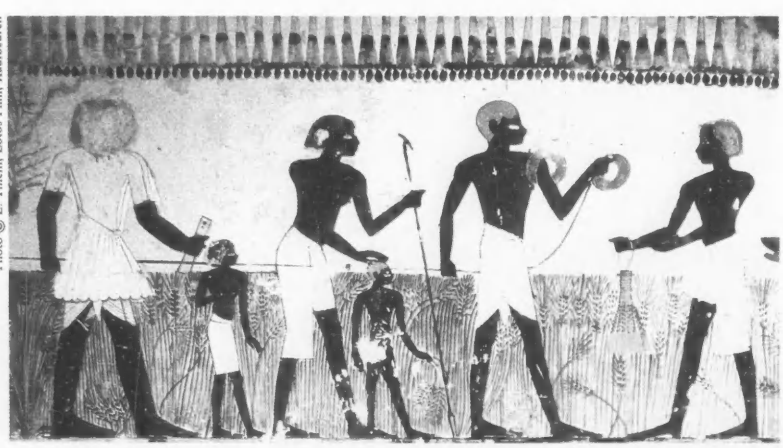


Photo © E. Thiem, Lotos Film, Kaufbeuren

RAINER STADELMANN, *of the Federal Republic of Germany, is director of the German Institute of Archaeology in Cairo and of the excavations being carried out by the Institute at the Temple of Sethos I, Qurna (Thebes), and at the Pyramid of Snofru, Dhashur. His published works include* Syrisch-Palästinensische Gottheiten in Agypten *("Syrian-Palestinian Divinities in Egypt") and* Die Agyptischen Pyramiden *(1986; "The Pyramids of Egypt"), as well as a number of articles in specialized journals.*

Photo Georg Gerster © Rapho, Paris

The Egyptian world-picture

BY JEAN YOYOTTE

THE huge temples and enormous funerary monuments of ancient Egypt with their profusion of hieroglyphs are a source of amazement to the modern mind, which cannot easily grasp their usefulness or significance. The ancient Greeks, so much closer in time to them, considered the Pyramids of Giza to be an absurd and oppressive show of royal pride. However, these monuments retain their majesty and cease to tower quite so disturbingly over us once we see them as an expression of the conceptions that the Egyptians had formed of their universe and of the answers that those conceptions provided to the problems of their society, reflecting ways of thinking and of acting that are at once strange and familiar.

That which is larger than life cannot be brought down to human proportions by means of a linear approach. Several different images, several different sacred accounts, taken together may help us to understand the same processes or phenomena. The impenetrable sky is an ocean, a roof, a cow, a woman's body. Any image rooted in tradition is relevant, despite its apparently contradictory features, and serves as a means of apprehending, coming to terms with, the world of the gods.

These differing approaches are often expressed through a dualistic way of thinking in which the whole may be reduced to the opposition and association of two qualities, exemplified by the twofold characteristic of the monarchy—twofold on two accounts—by the black earth and the desert, and by Upper and Lower Egypt. In addition, language, writing and images are not to be confused with conventional symbols. Between that which is named and drawn and the object, an affinity exists. Words thus create things—hence the importance of wordplay in creation stories—and speech commands things. These are the two principles of "magical" thinking.

▲ **Temple relief depicting, at right, Tuthmosis III (c. 1479-1425 BC) wearing the red crown of Lower Egypt, with the god Amun, creator and sustainer of the world. Amun holds the ankh, the ancient Egyptian symbol for life, and wears the two-plumed headdress with which he is usually represented.**

The vehicle of the words of the gods, the hieroglyphic system explains reality; composed of images drawn from Nature, it came into being at the same time as the Egyptian graphic arts. The representation of a living being, duly accompanied by the person's

Photo J.J. Languepin © Rapho, Paris

Detail of a pink granite relief carving of Nut, the sky-goddess and protector of the deceased. The carving, inscribed with stars, adorned the inside face of the sarcophagus lid in the tomb of King Psusennes I (1040-992 BC) at San el-Hagar (Greek Tanis) in the Nile Delta. Now preserved in the Egyptian Museum, Cairo, the hoard of funeral furniture found in Psusennes' tomb is comparable in richness with the treasure of Tutankhamun.

name, is a duplication of that person. An almost maniacal passion for giving lasting verbal and graphic expression to reality in order to shore it up by means of a supreme form of magic is a hallmark of Pharaonic culture and accounts for its extraordinary monuments and inscriptions.

The horizon of the Egyptians stretches from the narrow strip of black earth *(kemet,* from which derives *Kemi,* the Coptic name for Egypt) constituted by the flat alluvial valley of the Nile, to the red earth *(desheret)* of the immense Sahara all around, with its arid hills. "The Black Land" is the home of human beings, a place for the growing of crops, familiar and reassuring. "The Red Land" is terrible and strange. Aggressive bands of backward people are its denizens and from that area invaders come, whether from afar or from nearby. But in addition, the desert offers no escape, with its horizons where the sun is born and dies; its unchanging rocks and pure sands are welcoming to the dead and are the scene of invisible rebirths. An infinite liquid mass surrounds the solid universe, appearing on the face of the Earth in the form of the seas. This water constitutes the celestial vault where the stars follow their courses. It flows into the underground river, where the sun sails from west to east during the night, and each year it produces a new tidal flow in the form of the flood waters of the Nile.

Peopled with mysterious, somnolent beings, this ocean and the world of darkness filled the whole of space until the day when the sun, Re-Atum, rose up, pushing back the dense gloom to the periphery. A mound emerged from which the god gave shape to the present world, breathing air, light and life into it, while at the same time having to combat the forces of the void. He then created gods and men, animals and plants. This was to be but the "first occasion". Every evening, the sun god grows old, and every morning, rejuvenated and purified in the waters, he recreates the universe and joins battle; every day the dragon Apopis threatens the sun in his course. A rebellion on the part of mankind caused Re to take flight into the skies, but he continues to see to the maintenance of order, *Maat,* which he established and which is his life. Living beings are destined to grow old and become young again here on Earth, in accordance with a perpetual time cycle *(neheh),* like the sun, until the day when, touched by the finger of death, they entèr a static eternity *(djet)* like Osiris. When Atum returns to his original state of passivity, both space and time will cease to exist.

Several different myths and doctrines, reflecting the diversity of approaches and claims from one locality to another, recount in their own ways the work of the one and only demiurge. According to the predominant doctrine, originating in Heliopolis, it was Re-Atum who set things in their places, but the priests of Memphis believed that it was Ptah, the Earth, who was the first to appear and who then placed the sky on high and brought forth the sun. The scholars maintained that God conceived the universe in his heart (i.e. in his mind) and brought it into being through his mouth (i.e. his creative word).

In Pharaonic times sexual duality was considered to be an inherent part of the process of life, long before the hymns of the New Kingdom praised God as the father and mother. Two myths, that of *Kamutef* and that of the "Eye of Re", reveal the place of woman. Each major god is flanked by a female companion who is at once his daughter, his wife and his mother. He is brought into the world by this goddess and he makes her pregnant, being his own son and the

COLOUR PAGES

Colour page right

The lavishly decorated tomb of Sennefer at Sheikh Abd el-Qurna is known as the "tomb of the vines" because of the vine leaf motifs which adorn its ceiling. Sennefer, mayor of Thebes during the reign of Amenophis II (c. 1427-1401 BC), is shown on each pillar, sometimes accompanied by one of his three wives.

Photo B. Brake, © Rapho, Paris

Centre pages

Above left: the god Osiris is depicted on this pectoral from the tomb of Tutankhamun (c. 1333-1323 BC), Valley of the Kings at Thebes. The vast array of treasures making up the young king's funerary equipment, discovered in 1922 by the English Egyptologist Howard Carter, are preserved in the Egyptian Museum, Cairo.

Photo © G. Dagli Orti, Paris

"I shall never be far away from you while my hand is in your hand, and I shall stroll with you in every favourite place."

Extract from a poem written on papyrus and dating from the time of Ramesses II.

Below left, detail from a painting in the tomb of the first wife of Ramesses II, Queen Nefertari (c. 1290-1224 BC). See also photo page 22.

Photo B. Brake © Rapho, Paris

Above right: elongated head of an 18th Dynasty princess sculpted during the reign of Akhenaten (c. 1353-1335 BC) in the highly original Amarna style. Akhenaten's court artists depicted all the members of the royal household with the king's own physical imperfections, notably his egg-shaped skull.

Photo © J. Vertut, Paris

Below right: the boat was the most important means of transport in ancient Egypt, and wooden models of boats have been found in many tombs. This example, dating from the Middle Kingdom (c.2040-1640 BC), is equipped with two massive oars at the stern which acted as rudders. Northerly winds, favourable to sailing up-river, prevailed in the Nile Valley, but when travelling downstream the mast was lowered and the oars were used.

Photo © G. Dagli Orti, Paris

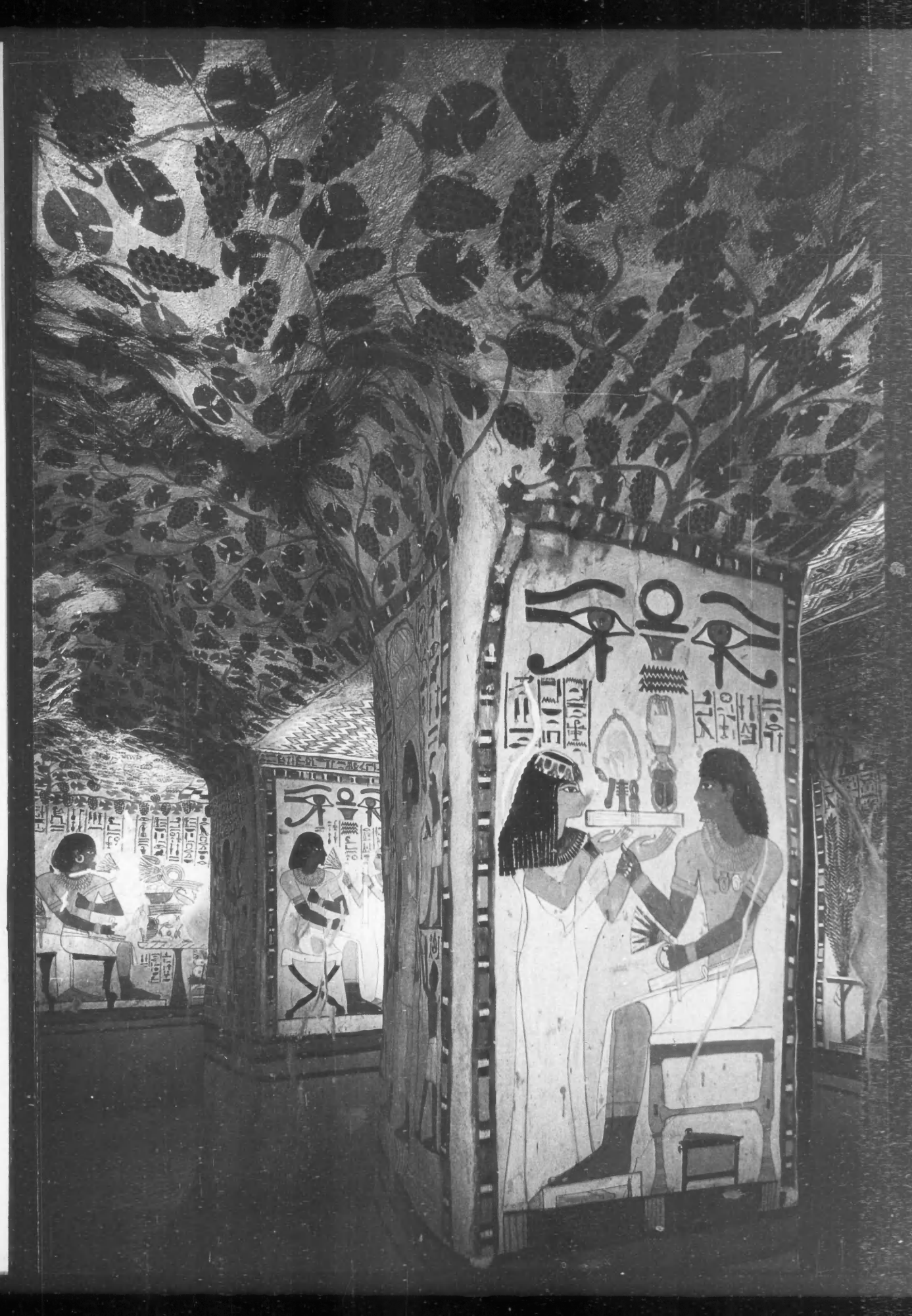
Further reading

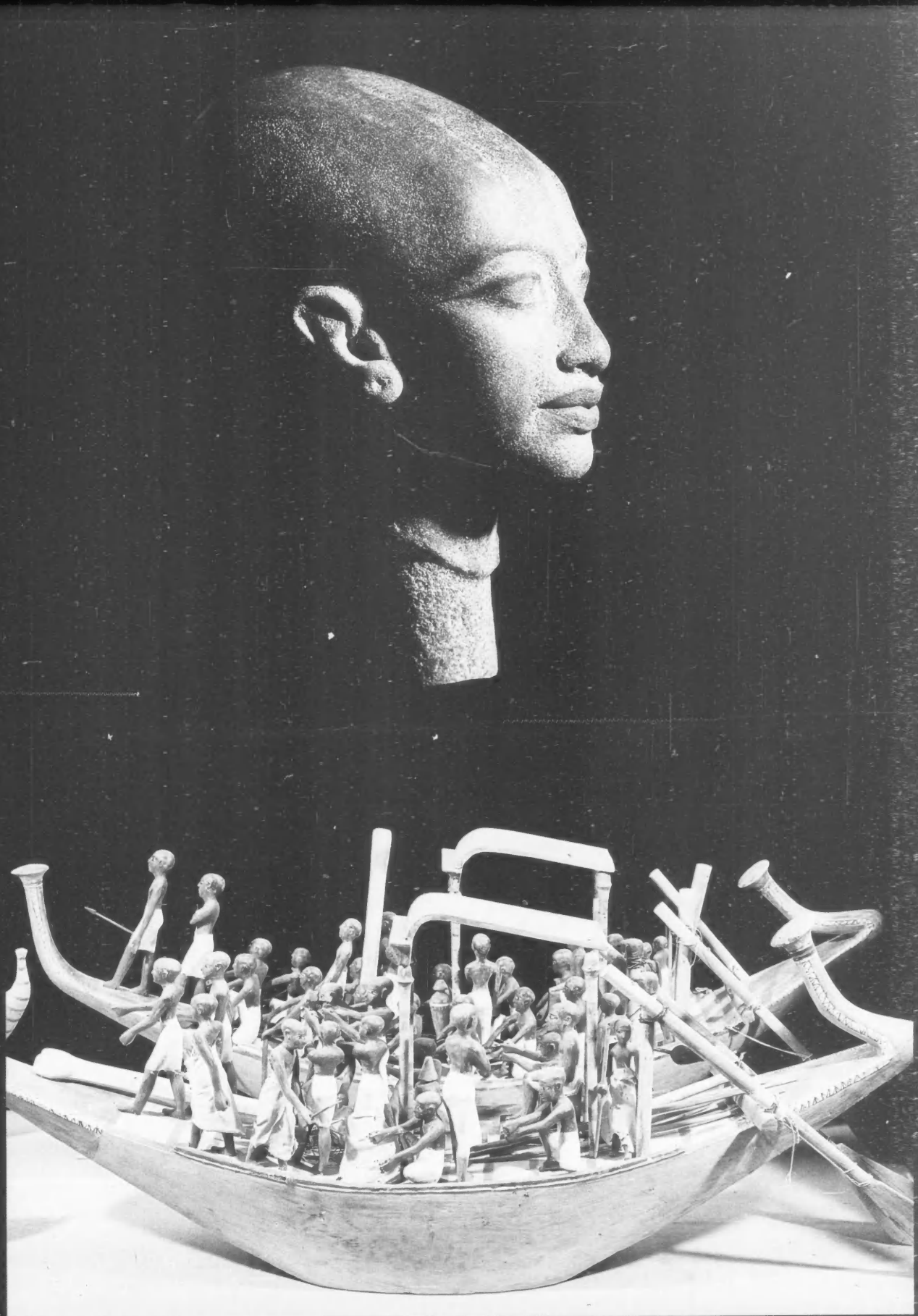
The Ancient Egyptian Book of the Dead (1985), *translated by Raymond O. Faulkner, edited by Carol Andrews.*

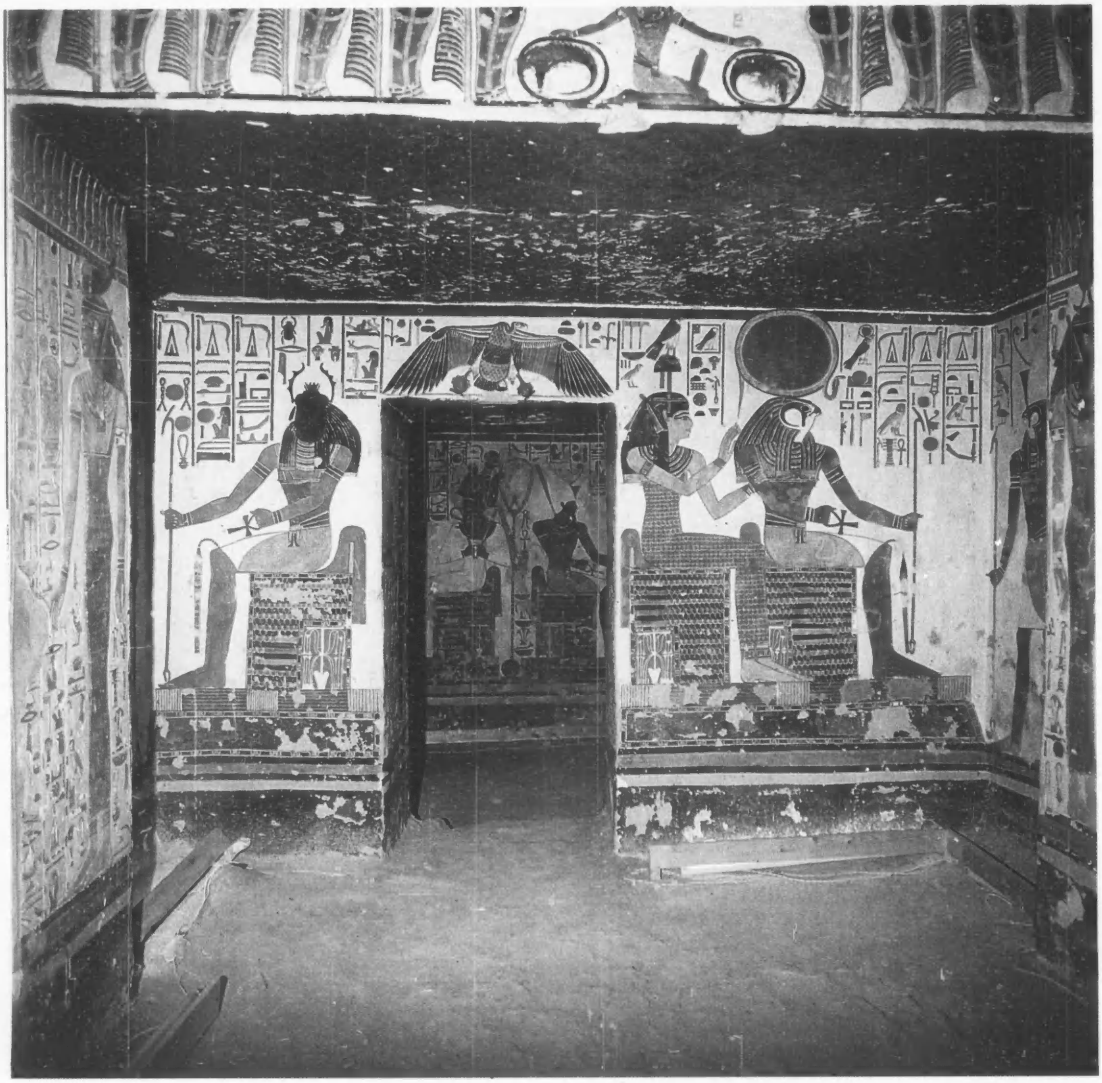
An Introduction to Ancient Egypt (1979) and Ancient Egypt: The Land and its Legacy (1988), *both by T.G.H. James.*

Reading the Past: Linear B and Related Scripts (1987) *by John Chadwick.*

All published by British Museum Publications Ltd., London.







"Bull of his Mother" *(Kamutef)*. This female companion is also his eye, the source of flames and light, who went away from him in anger and whom he had to pacify. An image of the ambivalence of the sacred, she is the good Hathor, desire and joy, and the dangerous Sakhmet, a leonine agent of calamity and a cobra who may strike against enemies and sinners.

Two divine couples born of the demiurge represent the ordering of the physical universe: air and light-fire; and earth and sky. The following generation, nearing man's estate, had to contend with human dramas in the shape of power struggles and death. Osiris, slain by Seth, found new life through Isis and Nephthys, and gained sovereignty over death and the dead. His posthumous son Horus assumed rule of the Earth by defeating his uncle Seth. The latter, a troublemaker who was not to be seen as a supreme satanic force until later periods, is an ambiguous figure. His divine violence is an inescapable fact, causing life to open onto eternity and serving to help Re and the Pharaoh to vanquish foreigners and the dragon of the void, thus giving rise to conflicting legends. For instance, power is said to be shared between Horus, the master of the black earth, and Seth, the master of the red earth; or Seth is described as the king of the South and Horus as the king of the North, forming together an indissoluble confederation; or again, and most frequently, Horus is depicted as expelling Seth and ruling alone over the organized world.

This entanglement of ideas and images underpinned a political theology that marked Egyptian history and culture so strongly at that time that they are legitimately designated by historians as Pharaonic, the word "Pharaoh", transmitted to us by the Bible, being a specific term for the king of Egypt. The king was the representative of the divine order and epitomized in himself alone the forces of economic, social and political life. The incarnation of Horus since the earliest times, the son of Re since the period of the great pyramids, the "perfect god" fulfilled the role of gods whose image, heir and servant he was. In him Horus and Seth were united. His coming marked the coming of Horus and at the same time the reappearance of the sun and the beginning of a new era. He maintained *Maat* among mankind and ensured security by driving back the barbarians and imposing Egyptian rule beyond the Nile Valley. He was the sole repository of that supernatural force which ensured victory and political wisdom. He alone issued decrees and was responsible for appointments to every single post. Initiated into the mysteries and highly cultivated, he kept the gods alive through the arts and through ritual.

The doctrinal foundations for the legitimacy of kings lay not in heredity but in immediate predestination, a choice made by God, illustrated by the fiction of his procreation by the god himself (myth of theogamy). Once he had taken possession of the crowns and affixed the cobra on his forehead, the new Horus took up his place among the gods. He would pass into eternity as a supernatural being. His tomb, along with the ceremonies accompanying his burial, reflected this difference that existed between him and the rest of humanity, exemplified by the pyramids of the Old and New Kingdoms with their vast royal temples, and the rock-cut tombs of the Valley of the Kings and the "Million-Year Castles" of the New Kingdom. One of the few social conquests achieved by ordinary people throughout the course of Egyptian history was the democratization of funerary privileges, which were extended to common mortals during each of the Intermediate Periods, when the central authority weakened. But each Kingdom that restored the unity of the monarchy invented further differentiations.

Ancient Egypt had no practical or theore-

Photo © Dagli Orti, Paris

Colour page left

One of the most beautiful tombs in the Valley of the Queens at Thebes is that of Nefertari. A striking feature of the tomb is this wall painting in which the morning manifestation of the sun god, Khepry, is depicted at left with a scarab for a head. On the other side of the doorway sit the goddess of the west (Hathor), with the sign for "west" above her head, and Re-Harakhty, or "Horus of the Horizon", the daytime form of the sun god, depicted with a hawk's head surmounted by a sun disk.

Photo © E. Thiem, Lotus Film, Kaufbeuren

Painted limestone stela from el-Amarna, with King Akhenaten (c. 1353-1335 BC) on the left, his wife Nefertiti and three of their daughters. The intimate family scene, typical of royal iconography during Akhenaten's reign, is blessed by the life-giving rays of the Aten, the sun god, represented by a solar disk. For 12 years or so, el-Amarna was Egypt's capital and centre of the new State religion introduced by the king, in which only the sun god was worshipped. Atenism was as close as the ancient Egyptian world ever came to monotheism. ▶

Photo Ross © Rapho, Paris

◀ **Detail of a wooden panel from a niche in the tomb of Hezyre, Chief Scribe and Chief of Dentists and Physicians of the 3rd Dynasty (c. 2649-2575 BC), at Saqqara. Hezyre carries the tools of a scribe over his shoulder—reed pen, water pot or bag, and a palette with cakes of pigment for making ink, all tied together.**

Painting from the tomb of Sennedjem, a high-ranking official during the reign of Sethos I, shows Sennedjem and his wife Iyneferti worshipping a group of deities. (See also photo page 6, left.) ▼

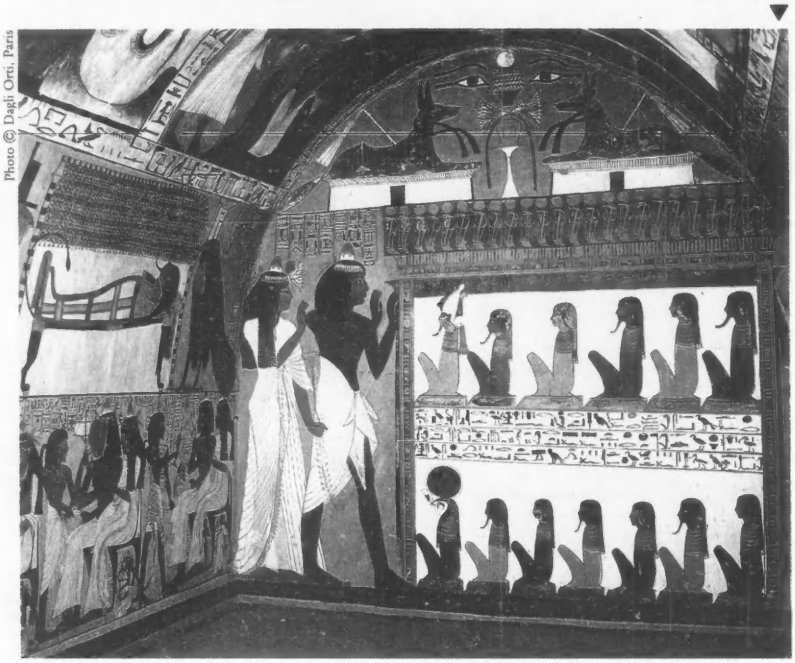


Photo © Dagli Orti, Paris

tical understanding of democracy. It elevated to the highest degree, and integrated into its cosmology, a system whereby all human authority was delegated to a chief. Not very inclined towards abstraction, the "prephilosophical" Egyptian had no word for State or for Nation, but invested the person of the sun king with all the attributes of the State. The various terms used to designate the king did not apply to foreign sovereigns and, in speaking of Pharaoh, the early Egyptians internalized their national feeling, although the storytellers were well aware that Pharaoh as god shared the physical and moral weaknesses of our species. Scribes and priests cultivated a spirit of loyalty towards the monarchy and finally attributed an ecumenical dimension to it which made it easier to accept foreign masters representing a universal empire: the Persians Cambyses and Darius, Alexander the Great, and the Roman Augustus.

This unified society whose sacred poems sang of the unity of creation and the mystery of the creator was at the same time radically polytheistic and stubbornly idolatrous. The Egyptian nation recognized all the gods revealed by the immemorial traditions of the different localities. Each had its own names, legends, major attributes and set images, making it unique of its kind. Each city god was revered by the local people whose lord he was and whose happiness he ensured. However, all the gods and goddesses were simultaneously recognized as the father or mother of the Pharaoh who kept them all alive and expected to be protected by them.

With time, a form of logic came to be introduced into this extensive pantheon through the establishment of a hierarchy and correspondences. The principal god of any province was thus seen as a manifestation of the sun, reflected in such names as Amon-Re, Montu-Re and Sobek-Re. Ultimately, all the gods came to represent in theory the manifestations or offspring of a single, remote god, while their personalities served on the occasion of State rituals and local devotions as a medium for approaching the divinity in its place of being, through its manifestations. The enlightened reform of the renowned Pharaoh Akhenaten, imposing the exclusive cult of the visible sun (the Aten) could not have any lasting success, especially since polytheism had profoundly modelled not only the tolerant spirituality of the Egyptians but also the economic and social structures of the country.

What then was the place of men and women in this universe where the whole of collective life seemed to be understood and managed in terms of communication between a single flesh-and-blood being—the king—and the multiplicity of gods? In comparison with other Near Eastern peoples in ancient times, Egypt was singularly modern. Human beings were equal before the creator and, as a general rule, owed their advancement purely to the judicious choice of the Pharaoh. There existed neither statutory aristocracy nor intermediate authority between the State and the individual. A man defined himself by the name of his parents and by his title in the administrative apparatus. The legal status of women was equal to that of men, although marriage was patrilocal and the activity of wives centred on the proud role that each one played as "Mistress of the House". The pleasure taken in the joys of the home are prettily expressed in tomb drawings and inscriptions and in literature. Children were desired and cared for, not in order to perpetuate a line but because of the happiness they brought and in order to enable their parents to live again through the funerary rites. In each village there was a strong sense of community.

The "haves" were required by the precepts of *Maat* to assist the "have-nots" and, as early as the third millennium BC, the "wisdom writings" of officials spoke of charity and alms-giving in terms that foreshadow Abrahamic religions. These wisdom writings preach good manners, reserve, absence of gesticulation, an entire discipline which is typified in Pharaonic drawings and statuary.

The omnipresent mediation of the king by no means ruled out direct relations between individuals and the gods. Admittedly, ordinary people, unless performing the functions of priests, did not enter the precincts of the major temples, which were so to speak factories for maintaining the energy of the universe, but at the door of the sacred precincts, in village oratories and in their inmost being they prayed to the gods of their choice and consulted their oracles in an effort to solve their health and career problems. Moreover, theories as to the power of names, writings and images offered a magical means of

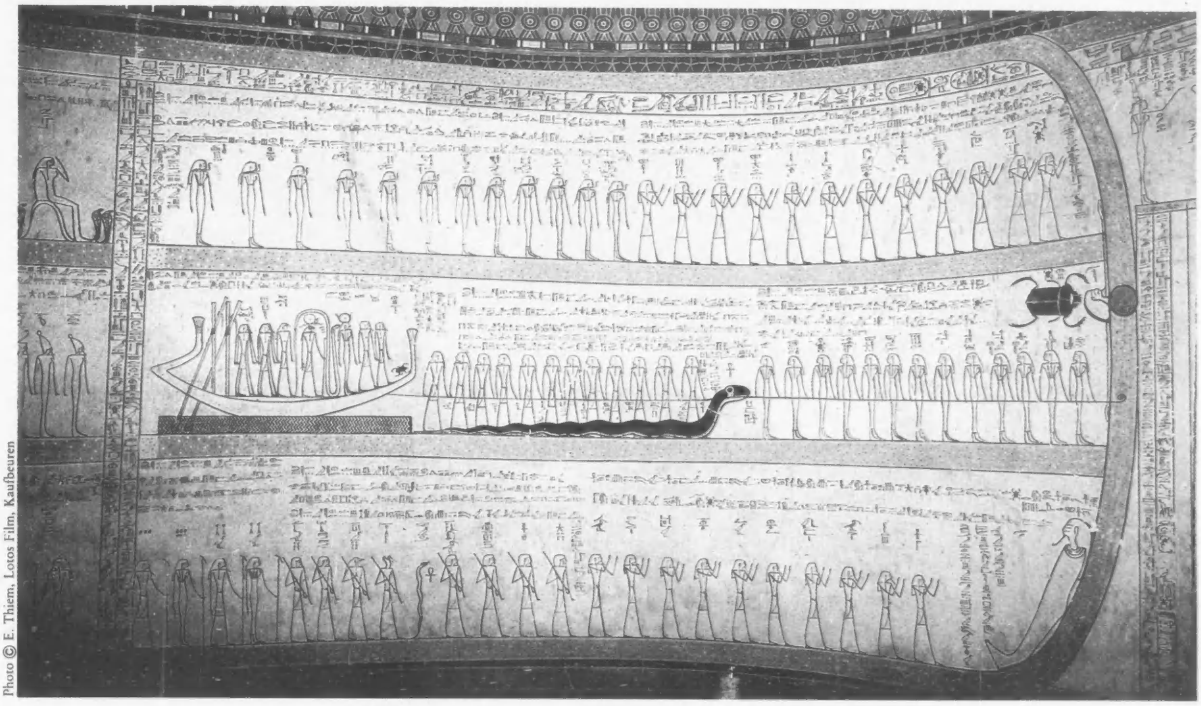


Photo © E. Thiem, Lotos Film, Kaufbeuren

Wall painting in the oval-shaped sarcophagus chamber of Tuthmosis III. It depicts a scene and texts from the Book of *Amduat* ("that which is in the netherworld"), a religious composition which describes the sun god's daily death and rebirth and is often found in royal tombs of the early New Kingdom. In this scene the sun god's bark has reached the 12th hour of the night, when the god and his retinue enter into the body of a giant snake which they will leave rejuvenated as "young children".

The judgment after death, a detail from one of the many funerary papyri placed in New Kingdom tombs, which are today known as the *Book of the Dead*. In this scene Anubis, the god responsible for embalming and the lord of the necropolis, weighs the deceased's heart in a balance against *Maat*, correct conduct in life. To his right, the moon god Thoth, symbol of wisdom and justice, records the result. If the heart and *Maat* are in equilibrium, the test is successful, and the deceased is presented to Osiris in triumph.

Photo © Dagli Orti, Paris

obtaining the favour of a god in one's lifetime. A statue or stele set in a holy place transformed the person who had erected it into a regular companion of the god concerned and enabled an indirect benefit to be gained from the offerings made to that god by the king, thereby ensuring prosperity, long life and the promise of a good burial.

For this was the one area in which the Pharaonic world view gave men and women the possibility of asserting themselves, availing themselves of all the magical powers of art, writing and ritual to ensure everlasting life for their mummified remains, their name, their mobile soul *(ba)* and their life force *(ka)*. They were offered eternal life, and a truly royal life since each person was transformed into Osiris; also, a truly divine life since each became a companion of the sun. From the time of the Middle Kingdom onwards, this survival depended in each case on the individual's morality. In the temples Pharaoh alone may have represented and spoken for humanity, but all Egyptians could, according to their resources and merits, express themselves through their tombs.

The sons of Re reached their first zenith in the third millennium BC. The Pharaonic world view was given tangible expression in the cities of pyramids, scattered through the region of Memphis, at the junction of Upper and Lower Egypt. During each successive reign, a new crop-growing area was established in the valley, while a royal city was built at the edge of the desert. This city served a temple where the ruling king, the incarnation of Horus, worshipped the gods. The holy of holies of the temple was the pyramid, representing the primordial mound and the course of the sun in which the new Osiris would be reborn. In the surrounding area, filled with images of everyday life, the tombs of the princes and ministers, followed by those of the priests and the keepers of the pyramids, formed a city of the dead, above the city of the living. A record of the conquest of the land, the chain of pyramids was a reflection of the ordering of the Egyptian cosmos before being the illustrious, disconcerting collection of mausoleums that we admire so much today. ■

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Daily life in the land of the Pharaohs

BY CHRISTIANE DESROCHES-NOBLECOURT

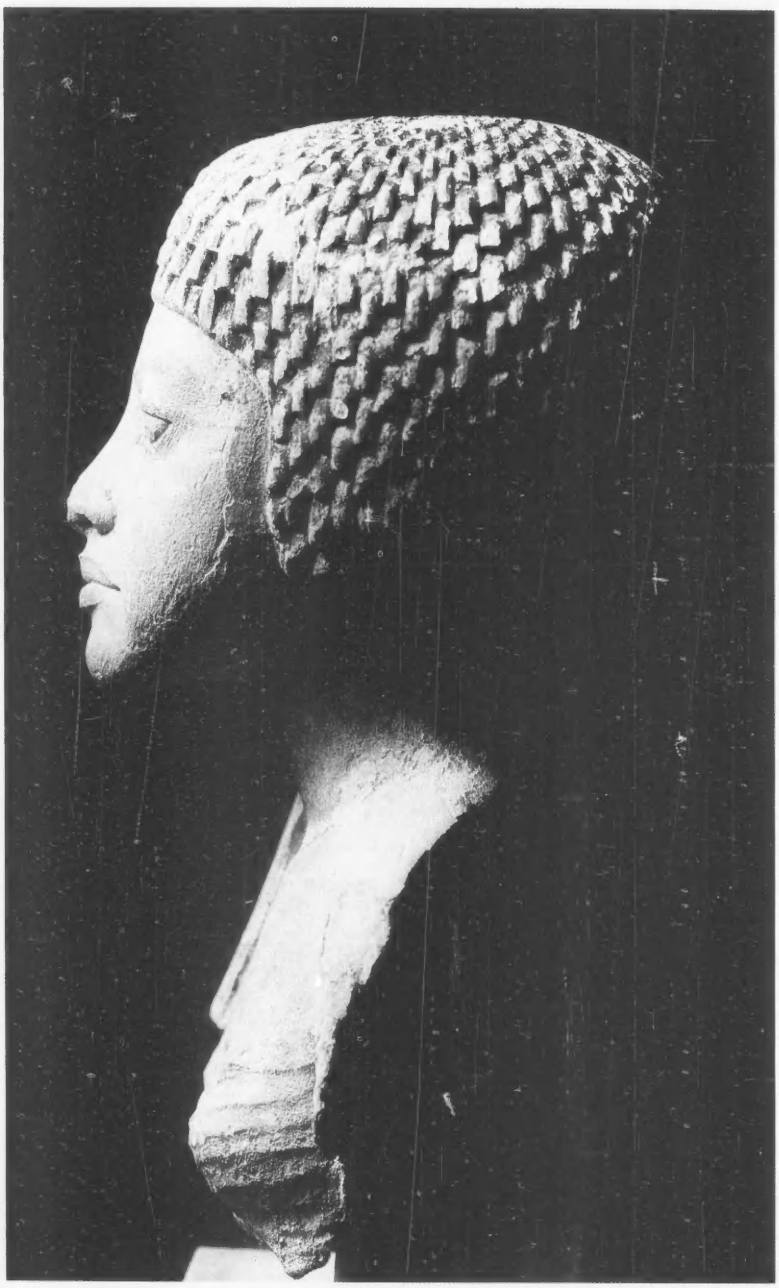


Photo © Bulloz, Paris. Louvre Museum, Paris

EVEN the uninitiated traveller along the banks of the Nile, studded as they are with superb vestiges of Pharaonic times, is immediately impressed by the essential features of the luminous civilization of ancient Egypt—a profound religious feeling that found expression in immense temples and tombs, and an intense and ardent love of life, endlessly recorded in the painted or sculpted images that adorn the inner walls of funerary monuments.

Study of these sources reveals that Egyptian temples were never destined to receive believers gathered to offer prayers to an evocation of God. They were sanctuaries designed primarily to maintain the cosmic machinery through the meticulous attentions of the Pharaoh, who was the earthly representative of divine power and purpose, the supreme pontiff surrounded by a hierarchy of priests. Ordinary people were denied access to these sacred edifices. Imbued with the divine, like "all that lives on land, in the air, under the water" (the plant and mineral worlds included), they recognized and worshipped their creator in all the manifestations of Nature, without frequenting temples. For them death was simply a threshold which took them closer to god, and in their funerary trappings they portrayed themselves in the presence of the deities of the underworld with which they would be in direct contact until their complete incorporation in eternity.

We should also take care not to misinterpret what we see in the tombs. The captivating scenes from daily life that adorn the walls of burial chambers and some of the ritual objects preserved in them should be seen in a mystical light as symbolic images of the "everyday" challenges and vicissitudes of the journey through the Osirian underworld from which the dead person would surely emerge in triumph, winning access to eternity.

These images are inspired by scenes from everyday life on the banks of the Nile. A funerary banquet incites the deceased to divine inebriation. A clump of papyrus reeds recalls the primeval marshland in which he must undergo gradual "gestation" as he moves towards apotheosis. A depiction of hunting the hippopotamus or trapping wild ducks is meant to paralyse demons that may block his path. Nets are set to catch the mystic fish, the symbol of his destiny. Grain is harvested and grapes are picked to make offerings of bread and wine for Osiris. The presence of a small calf symbolizes the sun's renewal.

Through this lively and colourful panorama, designed for otherworldly purposes, it

◀ **Limestone head of a young girl in the Amarna style. The short-lived Amarna period during the reign of Akhenaten (New Kingdom, c. 1353-1335 BC), who left Thebes to found a new capital city near the present el-Amarna, left a legacy of naturalistic statuary which broke with traditional conventions of representation.**

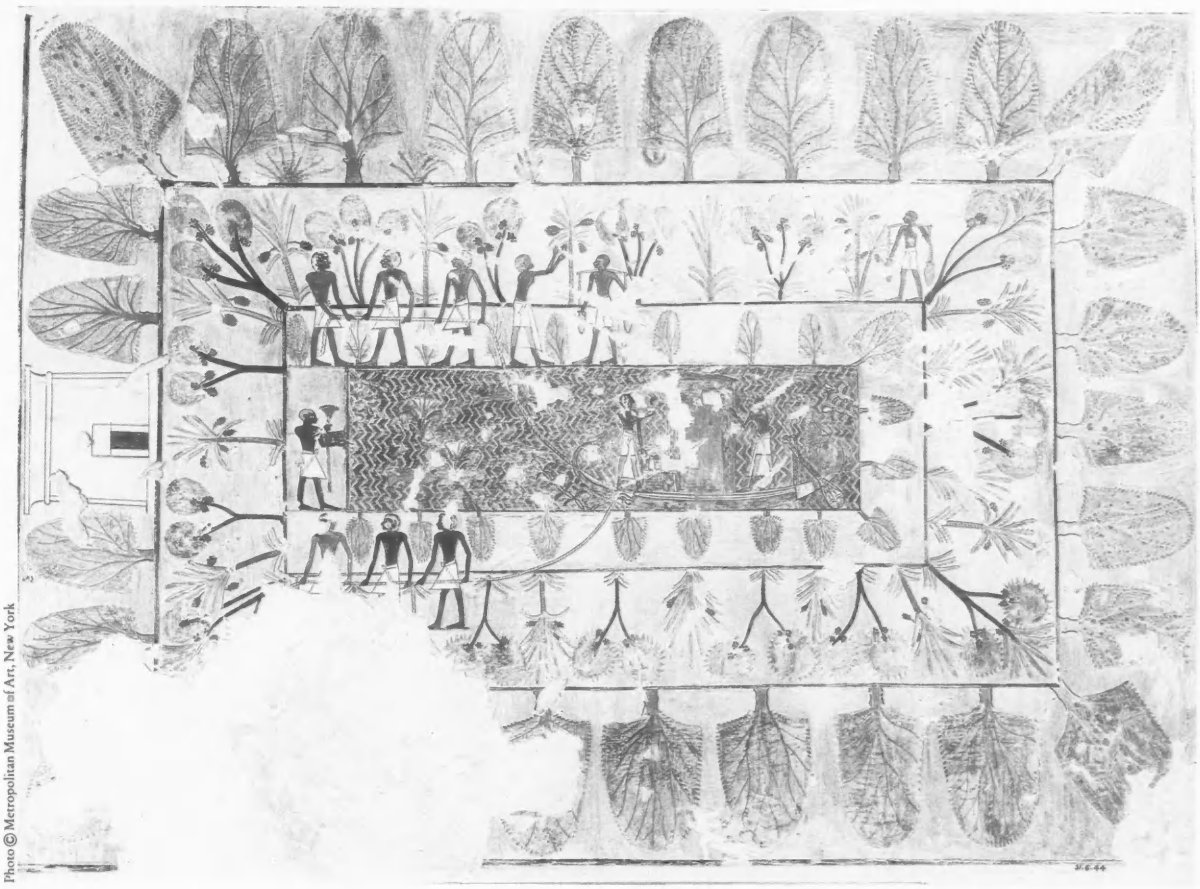


Photo © Metropolitan Museum of Art, New York

▲ **Wall painting from the tomb of the Vizier Rekhmire (18th Dynasty), at Thebes, shows the deceased sailing in a papyrus skiff pulled by haulers. The stretch of water, within a closed garden, is surrounded by rows of sycamores and date palms. Nature is widely represented in New Kingdom art, whose practitioners enjoyed greater liberty than their predecessors in choice of subject, especially in the decoration of tombs.**

is possible to grasp in broad outline the context in which "the herd of god", as the ancient Egyptians saw themselves, lived their lives.

It is an almost entirely agrarian setting, governed by what Julius Caesar (who adopted it and imposed it on the Roman world) termed "the greatest and most intelligent of calendars". This calendar was determined by the inundation of the Nile, which occurred every 365 $^{1}/_{4}$ days to cover and fertilize the drought-parched lands of Egypt (which had no other watercourse and virtually no rainfall).

The regularity of the annual flood had determined since the earliest times the calendar of three four-month seasons, instilling in the Egyptians, who were infinitely sensitive to their environment, a profound and unshakeable faith in the principle of eternal renewal.

Relations between men and women were modelled on those which were deemed to have governed the divine couples of "the earliest times", and were characterized by complete equality. Unlike women in many of the societies of classical Antiquity, the women of ancient Egypt enjoyed full legal powers. Even a married woman could manage her own fortune, share part of her husband's wealth and freely dispose of her own property among her children. The married woman was "Mistress of the House". She advised her husband and contributed largely to the prosperity of the household she managed. Cherished by her husband and respected by what she hoped would be a numerous offspring, she was happy to feel herself the pivot of the household and the family circle. Parents accorded their attention equitably to sons and daughters, not all of whom (especially girls) seem to have received much formal schooling. Some girls must, however, have undergone fairly advanced instruction, since women were admitted to certain posts in administration, in commerce and even in the scientific professions. The first woman doctor known to history, Lady Pesechet, was in practice in Memphis at the time of the pyramids, during the third millennium BC.

Profoundly patriotic, the Egyptian was by no means xenophobic. In early times prisoners were taken during conflicts caused by the need to defend the frontiers of "The Black Land" (Kemi, as ancient Egypt was called), but the Egyptians were fundamentally pacific people, for whom "war is a day of misfortune". Prisoners were humanely treated. While they were often consigned to the soldiers or officers who had captured them, they could be set free and even permitted to marry into the family of their captor. They were free to worship their own gods.

As was still to some extent the case on the banks of the Nile at the beginning of this

century, marriage was sanctioned neither by a religious ceremony nor by an administrative act. An agreement made before a witness by a man and a woman wishing to start a family was a commitment of great moral significance. On occasion, a deed might be drawn up to specify the personal property of each partner. The purpose of this was primarily to preserve the rights of the wife in the event of divorce, which could be requested by either of the parties. Since divorce entailed forfeiture by the husband of the wife's contribution (or of whatever he had acknowledged to be her contribution) to their joint fortune, it could prove a costly, if not ruinous, process for him! All these conditions, with the help of an admixture of common sense, helped to maintain the stability of marriage.

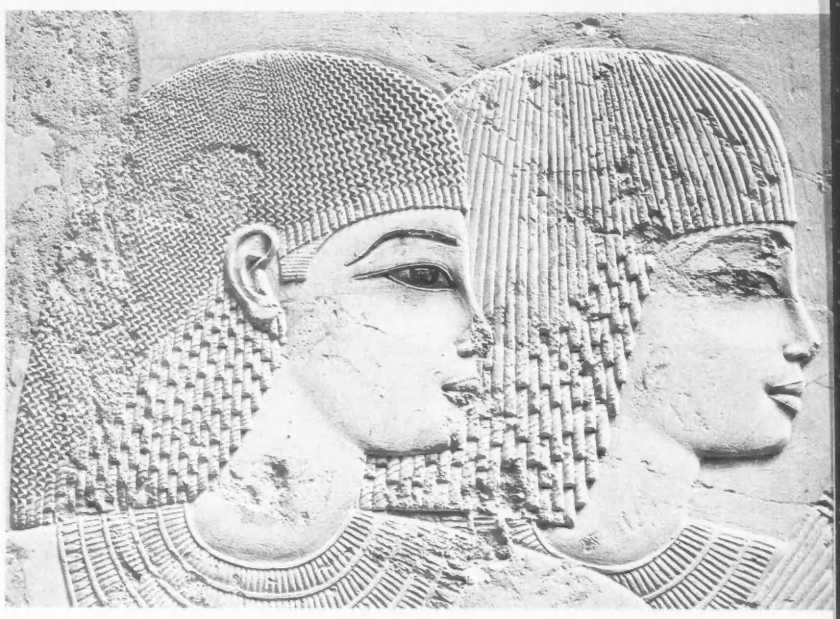
The simplest dwellings always comprised an enclosed courtyard leading to a communal living-room. Outbuildings were situated behind the house. A staircase led from the courtyard to a terrace, which was particularly appreciated as a place where the family could spend the hot summer nights and enjoy a breath of cool air.

Remains of the residences of very wealthy Egyptians have revealed a logical ground plan that remained unchanged for thousands of years. Like all other buildings except religious monuments, which were constructed in stone, a noble and durable material, such dwellings were built in unbaked brick, made of Nile mud mixed with straw and ash. Large country mansions in vast estates comprised three parts, corresponding to the requirements of everyday life. A large entrance-hall led to a central chamber whose high ceiling was supported by one or by four columns. Small windows high in the walls were fitted with bars. Here were held the receptions and festivities which the ancient Egyptians so enjoyed. Side rooms served as stores, offices or lodgings for secretaries or housekeepers. A staircase led to a loggia running the length of the entrance-hall.

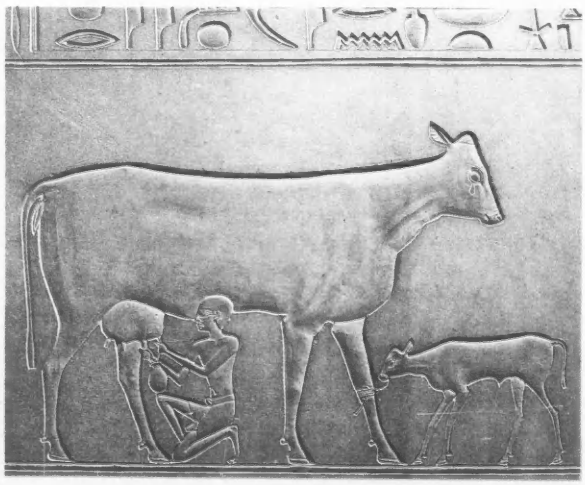
The third part of the house was reserved for family life, and included a central, more intimate, communal living room, rooms where the children worked and played during the cold days of winter and bedrooms. An entire wing reserved for ablutions (including showers), anointings and personal toilet and hygiene, was equipped with a system of drains.

These country estates, which functioned as small, closed economies, were completed by outbuildings housing kitchens, grain silos, a bakery, butchery, brewery, and various workshops, including one for weaving, which was the major household activity of women in all classes of society. Other domestic activities, notably cooking (except for making bread) were usually carried out by the men. Asses were kept in the stables, and so were horses, which were introduced into Egypt during the New Kingdom and were mainly used to pull the light chariots that also originated in the Near East.

A garden planted with sycamores, weeping willows, tamarisks and palms, patchworked with flowerbeds and further decorated with trellised vines and a refreshing pool of water, was the dream of every Egyptian. In the towns, where space was limited, gardens were smaller, surrounding buildings of several storeys containing the areas that occupied a single storey in the country. The weavers' workshop was located in the cellar, which doubtless also provided cold storage for foodstuffs and drink.



The sarcophagus of a royal lady named Kawit, in the precincts of the mortuary temple of Mentuhotpe (c. 2061-2010 BC), Deir el-Bahri, is decorated with reliefs evoking the daily life of the deceased princess and perpetuating it in the next world. Below right, the princess is seated on a high backed chair, mirror in hand, while an attendant arranges the curls of her wig. She is holding to her lips a cup of milk poured out for her by a steward. Below, the cow which gave the milk, with a calf still attached to its leg.



Photos © Dagli Orti, Paris

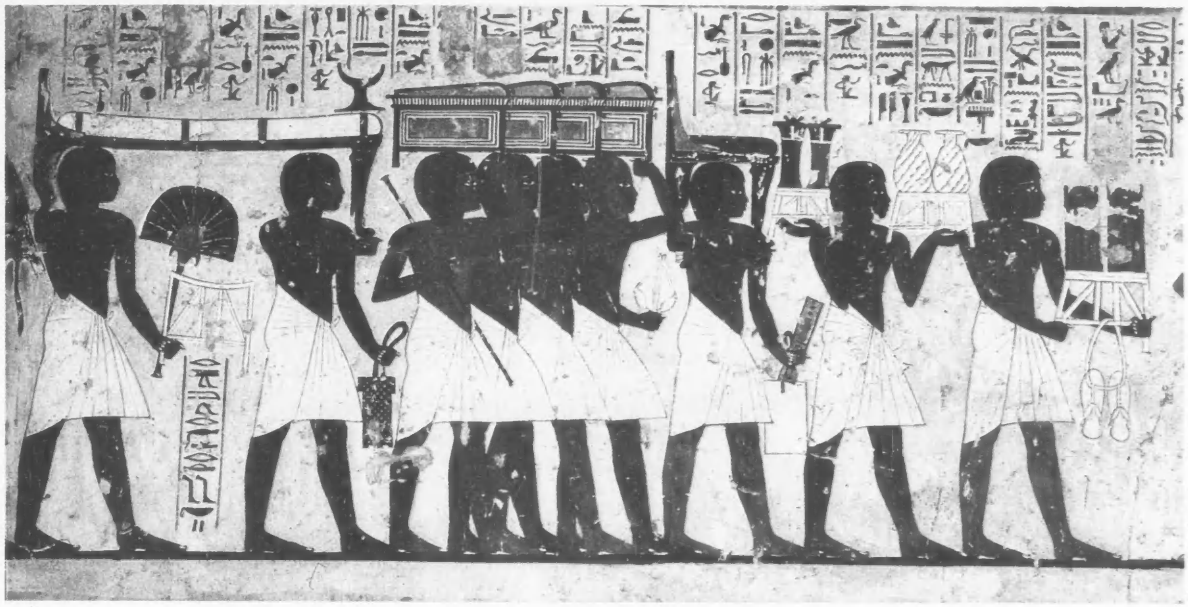


Photo © Dagli Orti, Paris

Photo © E. Thiem, Lotos Film, Kaufbeuren

▲
Above left, portrait of two children on a wall of the tomb of Vizier Ramose, governor of Thebes during the reign of Amenophis III and Amenophis IV (Akhenaten), c. 1391-1335 BC. The delicately modelled features of these limestone reliefs are typical of the polished style of the 18th Dynasty Amarna period. Above, procession bringing the funerary equipment to the tomb.

Kitchens and grain silos were situated on the terrace level.

Boys, whether of humble or noble birth, attended the temple school. One inscription tells us of a poor boy who had been able to "reach the feet of the Pharaoh thanks to his writing tablet". Each day, the mothers took the master payment in the form of food. Particularly promising pupils spent several years within the temple precincts. Familiarization with the many hieroglyphic signs, study of the written language and literature and of arithmetic, geometry and geography, all figured in secondary studies, at the conclusion of which successful pupils earned the title of "scribe who has obtained the tablet".

Appointment to an administrative post followed. Particularly gifted students might go on to higher studies in a "House of Life" within the precincts of a temple, which propagated the teachings of great architects, scientists (medicine, pharmacology, chemistry, astronomy or geometry) and men of letters, as well as philosophy and the pursuit of wisdom. Lessons were generally accompanied by practical exercises and laboratory work.

At holiday time the whole population was free to celebrate the great seasonal festivals during which symbols of divinities were brought from their sanctuaries and borne through the crowds in sacred barks, amid the excitement of processions and theatrical performances.

The most important of these occasions was, of course, the New Year, when the Nile inundation covered the cultivable land and freed the farmers from their work in the fields. On this great day, and during the weeks that followed, the people travelled from village to village, visiting friends and relations to pay together their respects to revered ancestors and to the creator responsible for the divine and providential phenomenon that had occurred once again to enrich the soil of Egypt. ■

Agricultural scenes are depicted in the tomb of the Theban surveyor Menna (18th Dynasty). Below, threshing with cattle.
▼

Photo © J. Vertut, Paris

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Egypt and the Mediterranean world

BY GABALLA ALY GABALLA

HISTORIC Egypt emerged as a unified country, with its own system of writing, towards the end of the fourth millennium BC. It rapidly became the seat of a brilliant civilization in which flourished philosophy and literature, architecture and art, science and medicine, administration and social organization. From ancient times, thanks to the country's situation on the Mediterranean coast, the Egyptians made increasingly numerous contacts with Europe. The contribution made by Egypt to Western culture enriched civilization as a whole.

Around the same time, the Minoan civilization (named after Minos, the legendary king), came into being on the shores of the Aegean, centred on the island of Crete.

Although the Mediterranean was no obstacle between Egypt and the Aegean, contacts between Egyptian and Aegean traders and emissaries were made first of all in the Phoenician coastal ports, Byblos in particular. Egyptian trading vessels no doubt set sail from these ports to Crete, and called at Cyprus, Rhodes, Karpathos and Kasos before returning directly to Egypt (some 270 nautical miles from Crete), carried along by the north winds that blow in summer. The voyage then took three days and two nights.

There is no lack of archaeological evidence for relations between the two peoples. Many Egyptian cylindrical stone jars have been found in Crete and eventually the Cretans adopted the Egyptian technique of manufacturing these jars. On the island of Kithira, an alabaster vase has been found bearing the name of an Egyptian king of the Fifth Dynasty (c. 2465-2323 BC). From the twenty-second century BC, Egyptian writings began to mention Kaftiou, an Egyptian adaptation of the Semitic name for Crete, Caphtor, which also appears in the Bible.

At the beginning of the second millennium BC, there was a thriving trade between Middle Kingdom Egyptians and Cretans of the period known as Middle Minoan. Many Egyptian objects from that era, including everyday utensils, scarabs used as seals and a diorite statuette, have been found in Crete, while Minoan pottery in the Kamares style, and silver vases showing an Aegean influence, have been discovered in a temple near Luxor.

Around 1500 BC, Egypt cast off the yoke

Photo © E. Thiem, Lotos Film, Kaufbeuren

Photo © Hassia/Telecolor, Vanves

◀ **Minoan terracotta figurine with an Egyptian hairstyle (14th or 13th century BC)**

Photo © Hassia/Telecolor, Vanves

▲ **This votive object from the New Kingdom representing an Egyptian woman was found in a cave at Tzouzoura, Crete.**

◀ **Relief from the tomb of Puiemre, one of the high priests of Amun during the reign of Tuthmosis III (c. 1479-1425 BC), depicts foreigners bringing "tributes" to the Temple of Amun at Karnak. Between two Syrians, a Cretan is shown with characteristic shoulder-length hair.**

of the Hyksos[1] and emerged from its traditional isolationism to become an international power, strengthened by a series of military victories. Phoenicia and Syria fell under its sway, and the Egyptian fleet controlled the Phoenician ports, probably extending its influence as far as Cyprus. This Egyptian presence created a new situation in the eastern Mediterranean basin. The Aegeans of the Late Minoan period and the Mycenaeans of Hellas[2] had thereafter to deal directly with the Egyptians if their merchant ships were to have access to the traditional markets of Palestine and Syria. In all probability, the Cretans and the Mycenaeans came to an agreement with the powerful Pharaoh Tuthmosis III (c. 1479-1425 BC). The tomb of his vizier Rekhmire, at the necropolis of Thebes, depicts Cretan emissaries bearing tribute from their island. The Egyptian inscription describes the scene: "The arrival of the princes from Kaftiou and the islands in the midst of the sea, submissive and with bowed heads before the might of His Majesty Tuthmosis III". There is every reason to believe that these "islands in the midst of the sea" were those of the eastern Mediterranean and the city of Mycenae in the Peloponnese.

Brown-skinned Aegeans, wearing brightly coloured loincloths and with thick manes of hair hanging to their shoulders or worn in one or more plaits bound around their foreheads, became a familiar sight to the Egyptians as they threaded through the streets of Thebes to bear their gifts, called "tribute" by the Egyptians, to Pharaoh: large, ornate goblets with handles shaped like animals, or elongated vases with small handles, decorated with floral motifs or horizontal polychrome lines.

Towards the middle of the fifteenth century BC, the Cretan civilization foundered, probably as a result of internal power struggles. Small wonder, then, that the name of Kaftiou should have disappeared from Egyptian sources after the end of that century. However the expression "islands in the midst of the sea" continues to occur frequently in these writings, before disappearing, in its turn, in the twelfth century BC, when successive waves of the barbarians known to the Egyptians as the "sea peoples" were surging into the Peloponnese peninsula and wreaking havoc. These hordes crossed Anatolia (where they annihilated the Hittites) and Greece, and advanced on Egypt overland across Syria and by sea via the Mediterranean islands. But they were repelled by such powerful Pharaohs as Ramesses II, Merneptah and Ramesses III, who saved Egypt from destruction on a massive scale.

The Greek presence in Egypt made itself felt in the early seventh century BC through mercenaries serving in the Egyptian armies and merchants who set up trading posts in various towns of the Delta. Greek philosophers, historians and geographers followed them, dazzled by Egyptian civilization with its gigantic monuments, its beliefs and its wealth of knowledge.

The Greek astronomer, philosopher and mathematician, Thales of Miletus, is said to

1. Asiatic invaders of northern Egypt who ruled as the Fifteenth Dynasty (c. 1640-1532 BC).
2. Greeks of the classical period called their country Hellas and themselves Hellenes.

have brought back the 365-day solar calendar from Egypt at the end of the seventh century BC. The Athenian statesman Solon (c. 640-560 BC) visited Egypt at the time when, according to Herodotus, the Sixteenth-Dynasty king Amasis II promulgated a law under which each Egyptian was obliged to make an annual declaration of income and return it to the governor of the province. Any person guilty of illicit gains was condemned to death. Solon had an identical law adopted in Athens. Another Greek historian, Diodorus of Sicily, recounts that Lycurgus (legendary king of Sparta) drew inspiration from Egyptian legislation, as did Plato.

Egypt's influence on early Greek art is evident, too. The *kouros* figure of a young man, characteristic of archaic statuary, has an Egyptian air about it. The tall, slim youth stands with his left leg forward, his arms held straight by his sides and his hands clenched. This type of statue not only imitates the attitudes of Egyptian figures, but also abides by the traditional rules governing Egyptian art, in particular the "rule of proportion" that its creators had been applying for over 2,000 years. The human body was originally divided into 18 equal squares, and into 21 from the Saite[3] period (seventh century BC), when the unit of measurement of length, the cubit, was modified. Diodorus of Sicily relates that in the sixth century BC Telekles and Theodorus, two famous Greek sculptors, drew on that tradition for a statue of Apollo by dividing the body into 21 $^1/_4$ squares.

Over the centuries, the Greeks became increasingly involved in the history of Egypt. In 332 BC, the country was conquered by Alexander the Great, and a Macedonian Dynasty was founded which governed the country for some three centuries. Egypt became part of the Hellenistic world encompassing the eastern basin of the Mediterranean. Alexandria, the new Egyptian capital founded by the Greeks, brought fresh prestige to Hellenism through its writers, geographers, historians, architects and astronomers.

When the Roman general Marcus Antonius, ally of Cleopatra VII, lost the battle of Actium in 31 BC, Egypt became a Roman province. As the granary of Rome it helped to supply the Roman army during its major conquests.

As regards religion, the cult of Isis and Osiris (Serapis, in its Ptolemaic form), and of their son Horus-Harpocrates, was widely adopted in the Graeco-Roman world. The legend of Osiris, based on belief in the afterlife of the soul in a better world, has strong popular appeal, since it promises salvation to all, a concept lacking in the official worship of the Greek and Roman divinities. To the Greeks, Isis was the incarnation of destiny, since she succeeded in freeing herself from the control of the gods and thereby acquired absolute power. The Isis cult in Rome competed with the Roman religion and emperor-worship. Moreover, the Osirian triad foreshadowed the Christian trinity. Before the advent of Christianity, Isis-worship in Europe became as prevalent as the later cult of the Virgin Mary.

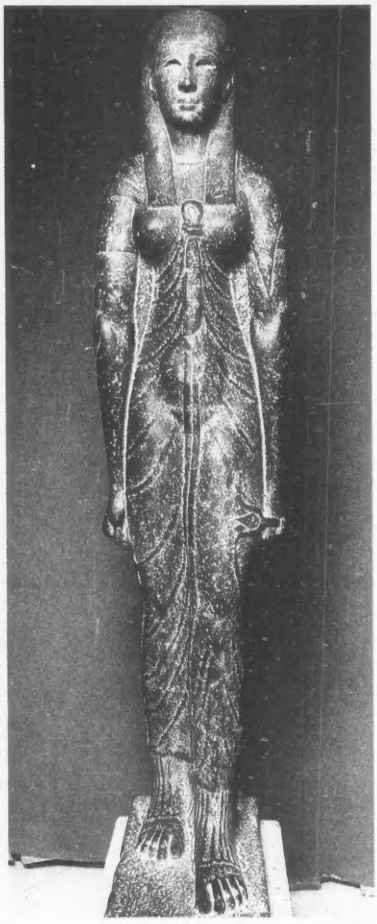

Photo Mario Carrieri © Menil Foundation, Houston

▲ **Black basalt Roman statue of the Egyptian goddess Isis, whose cult was widespread in the Graeco-Roman world.**

The hand of Seshat, goddess of writing and of learning, and the protector of royal chronicles. Together with Thoth, patron of scribes and the art of writing, she recorded each king's name and the dates of his reign on the leaves of the tree of life, as in this relief on the throne of Ramesses II (c. 1290-1224 BC) at Luxor. ▼

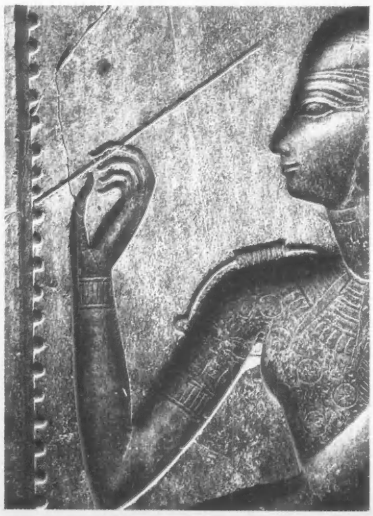

Photo Ross © Rapho, Paris

The world also owes the invention of the calendar and the alphabet to the ancient Egyptians.

Like other peoples, the Egyptians first devised a dating system which divided time into lunar years of 354 days. But before long they realized that it was not sufficiently accurate and was unsuited to the organization of their complex bureaucratic system, so it fell into disuse except for the celebration of certain religious events. Around 3000 BC they invented a solar calendar of 365 days divided into twelve months of thirty days each, to which at the end of the year were added five extra, or "epagomenal", days. The Egyptians knew that their year was six hours shorter than the solar year (365 $^1/_4$ days), but for a long time they did nothing to remedy this discrepancy. Only under Greek rule did they begin to add one day to the official year every four years, to bring it into alignment with the solar year. That calendar was adopted by Julius Caesar and imposed in Rome from 45 BC. The Julian calendar was used in Europe and the West until, at the end of the sixteenth century, it was refined by Pope Gregory XIII and, as the Gregorian calendar, became known throughout the world.

Towards the end of the fourth millennium BC, the Egyptians invented a system of writing which used hieroglyphic signs, i.e. pictures, rather than letters. These pictures were chosen, not for their meaning, but for the sounds that they represented.

It is true that the modern European alphabet is derived from the Graeco-Roman alphabet, which is directly based on the Phoenician alphabet. But what system of writing influenced the Phoenicians? The oldest Semitic texts known to us date back to the fifteenth century BC. They were discovered in the Sinai desert, and contain Semitic terms transcribed with signs that resemble hieroglyphs. It is very likely that this Semitic writing was based on hieroglyphs, using a system of pictured sounds, and that it developed over several centuries into the Phoenician alphabet, in which each sound is represented by a single letter. It seems probable, therefore, that the alphabet, one of the greatest achievements of the human mind, is of Egyptian origin. ■

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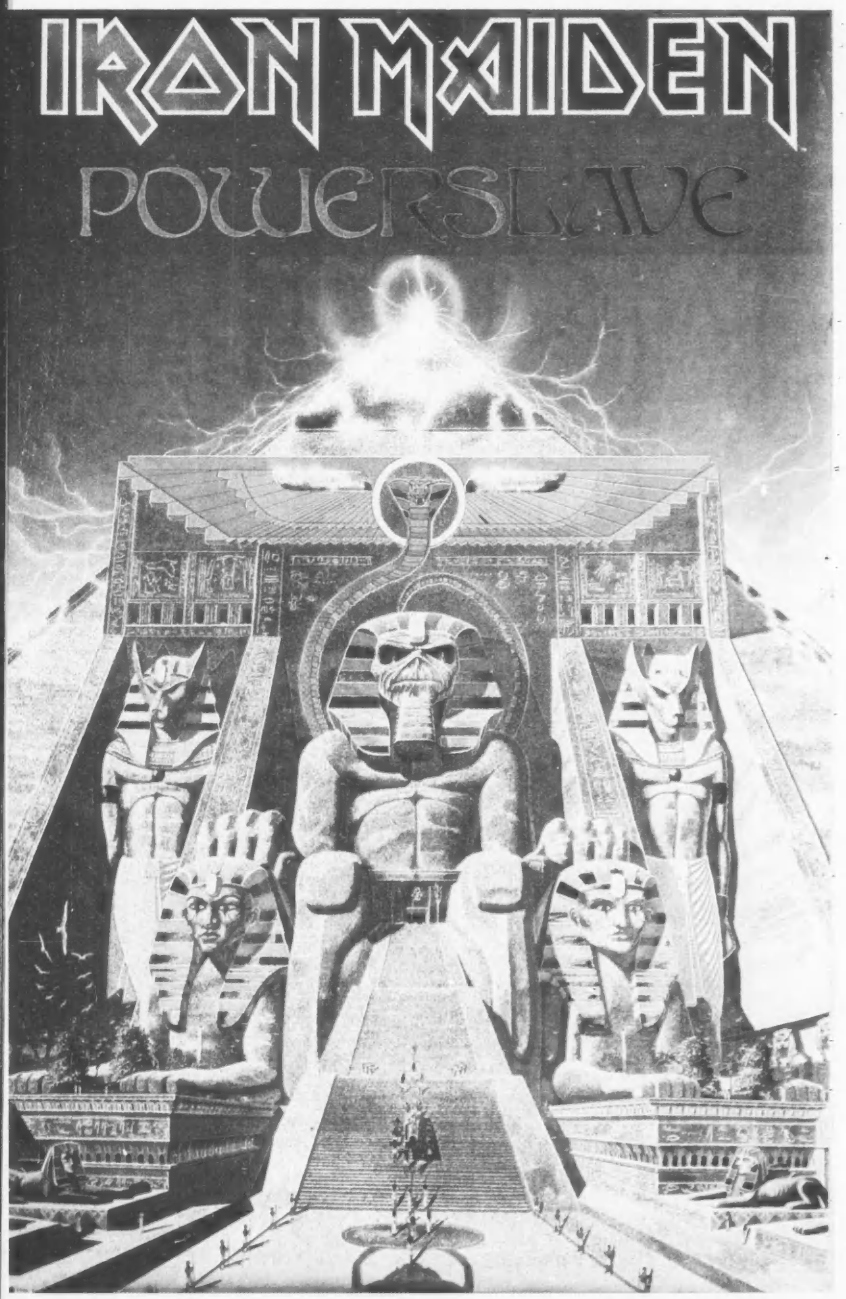
3. Named after the Twenty-Sixth Dynasty (664-525 BC) capital city, Saïs, in the Nile Delta. *Editor.*

Photo © Derek Riggs-Iron Maiden (Holdings), Ltd., New York

Pharaonic art and the modern imagination

BY RICHARD A. FAZZINI



THE sense of identity underlying Egypt's nationalist movement was enhanced by the archaeological rediscovery of ancient Egypt, a fact reflected in such works as Cairo's partially pharaonicizing sculpture *The Awakening of Egypt* by Mahmoud Mokhtar (1891-1934), and in the use of ancient Egyptian history in the early allegorical novels of the modern writer Najīb Mahfūz.

These uses of elements of ancient Egyptian history and art might have seemed familiar to the Pharaohs of the early New Kingdom (sixteenth century BC) who expelled the Hyksos—the so-called "shepherd kings from the East"—and reunited the country. Viewing themselves as heirs to the kings of the early Middle Kingdom (late twenty-first to early twentieth century BC) when Egypt was reunited after the collapse of the Old Kingdom, they established close religious and archaizing artistic links between themselves and their early Middle Kingdom "ancestors". In fact, ancient Egyptian civilization, while sufficiently evolutionary to permit incredible artistic change, was also sufficiently resistant to change to ensure amazing artistic continuity, and encompassed concepts that could allow the past to be a viable model for the present.

This also helps to explain how Egyptian art of the fourth century BC and later, which included the native Twenty-ninth and Thirtieth Dynasties (399-343 BC), was a blend of the traditional and the innovative. Among the features of that era's art was a greater fullness in figural style, a greater penchant for animal figures, a plethora of figures of gods and of religious symbols, and more complex forms and decoration in general. It was this later Egyptian art especially that spread throughout the Hellenistic and Roman world, via the diffusion of Egyptian cults. In Italy and Rome in particular, objects imported from Egypt were supplemented by new Egyptianizing works made to serve cults that also partook of non-Egyptian elements, to reflect imperial glory, or simply to decorate houses and gardens.

With the fall of Rome and the rise of Christianity and Islam, ancient Egypt entered the realm of the unknown, mysterious and fabulous. It remained there even when Egypt's rediscovery was begun in the Renaissance, because the rediscoverers were concerned, for example, with ideas of links between Christian doctrine and the wisdom or magic of ancient Egypt. Further, the Renaissance's main sources for the study of ancient Egypt were the Egyptian and Egyptianizing objects from Italy and Rome. The former were hardly representative of ancient Egypt in general, and the latter varied greatly in the degree of adherence to Egyptian norms.

◀ **Poster advertising a record album by a modern pop music group is a fantastic and theatrical mix of popular images of ancient Egypt.**

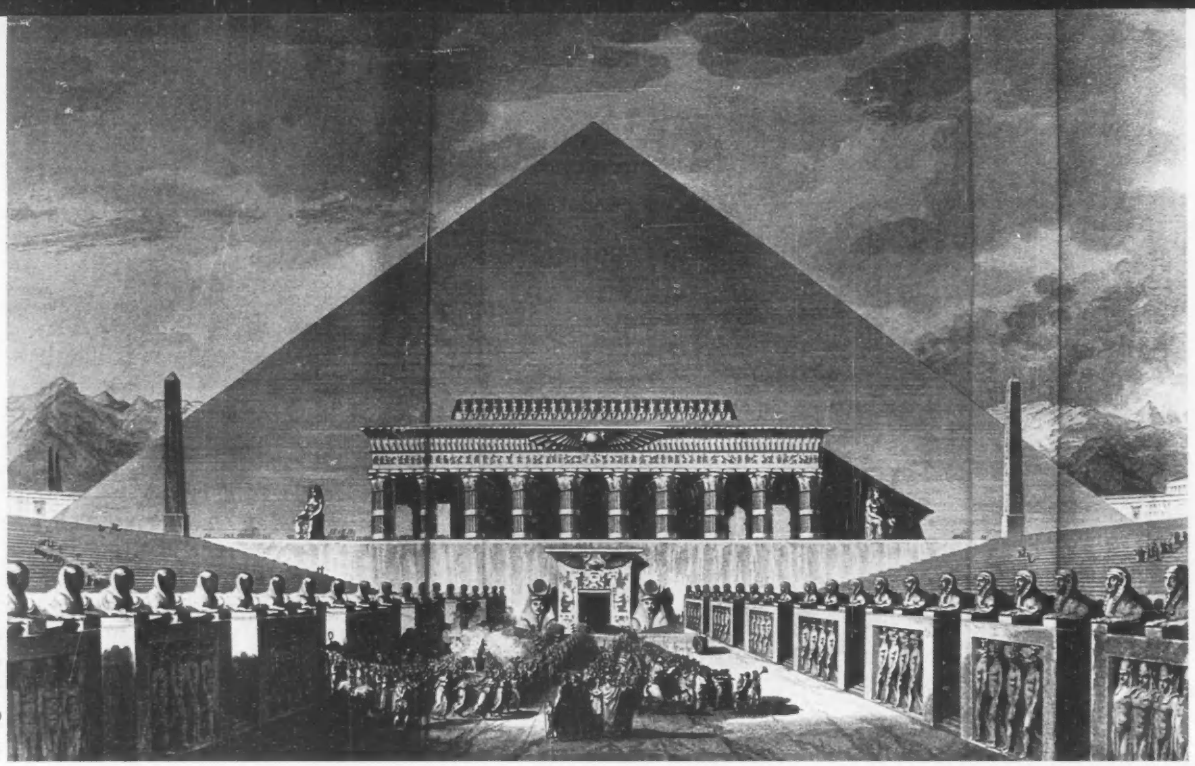


Photo © Fazzini, New York

Above, the *Grande Pyramide*, an engraving by the French artist Louis-François Cassas (1756-1827). The entire composition is a Romantic fantasy combining an Old Kingdom pyramid with a temple of much later date, and an approach lined with very un-Egyptian sphinxes. In the background is an equally un-Egyptian mountain landscape. Above right, a glass and steel pyramid has been erected above the main entrance and reception area of the Louvre Museum, Paris, as part of a modernization programme. The structure, designed by the American architect I.M. Pei, was completed in 1988.

One especially important discovery was the Roman Period *Mensa Isiaca*, so called because it resembles the top of a table (*mensa* in Italian) and because its iconography relates it to the cult of Isis. Made of bronze and silver, it is decorated with images of Egyptian deities and symbols, as well as hieroglyphs which are imperfectly understood. Like sculptures similar to the second century AD Egypto-classical figure of the Emperor Hadrian's favourite, Antinous, found at Tivoli in 1740, the *Mensa Isiaca* became a source for Egyptianizing elements in the art of the Renaissance. In part because they went on being presented as fine sources for such endeavours, they and other Egyptian and Roman Egyptianizing works continued to play a role in Egyptian studies and Egyptianizing art in the Western world, despite increased interest in, and firsthand knowledge of, Egypt in the seventeenth and, especially, in the eighteenth centuries. Nevertheless, in the eighteenth century several non-scientific developments also led to greater interest in ancient Egypt, and also increased its influence on Western arts. These developments included the growing importance of Freemasonry, the concept of the Sublime (the ability of art and architecture to induce emotional reactions such as amazement and dread) and emerging Neoclassicism's concern for grandeur, simplicity and massiveness.

Such concepts informed the reconstructions of Egyptian temples by the French painter and designer Louis François Cassas, published in 1799, and the schemes for vast Egyptianizing monuments by architects such as Etienne-Louis Boullée (1728-1799), also of France. Equally significant, but in a very different vein, are the drawings of extravagantly Egyptianizing rooms and fireplaces by the Italian printmaker and architect Giambattista Piranesi, published in 1769. Based to no small extent on late Egyptian and Roman Egyptianizing art, they constitute a major attempt to create an Egyptianizing style instead of using individual motifs. Indeed, Piranesi was among the first to appreciate Egyptian art for its decorative beauty as opposed to its majesty or mystery. Europe was thus already involved with ancient Egypt when the Napoleonic Expedition to Egypt of 1798-1801 ushered in the first and largest of what would be many Egyptian revivals, between which interest in Egypt has never really vanished.

The Napoleonic Expedition also initiated Egypt's archaeological rediscovery, which led to scholars' growing ability to reconstruct Egypt's history and civilization more accurately, and to understand and appreciate the art of all its ages. It also made possible more accurate Egyptianizing in literature, art, architecture, stage sets and the like. Nevertheless, this did not happen all at once, as evidenced, for example, by the figure in the 1808 Egyptianizing fountain in the rue de Sèvres, Paris, that is based on the statue of Antinous discovered in 1740. If newly discovered, older Egyptian models appeared alongside long-familiar later ones, they did

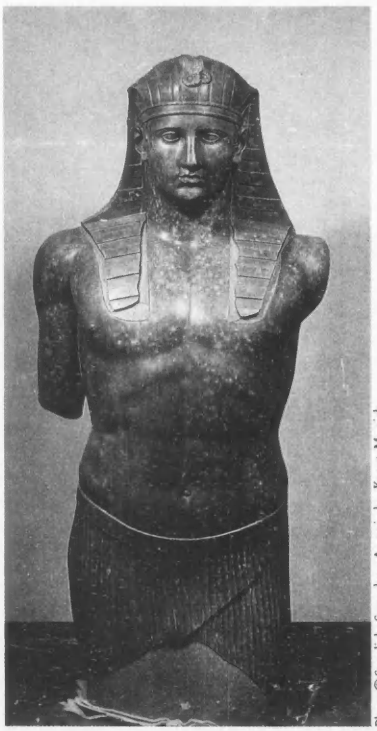


Photo © Staatliche Sammlung Ägyptischer Kunst, Munich

Photo Unesco Courier

Below left, a 2nd-century-AD Roman statue of Antinous, favourite of the Emperor Hadrian. Antinous, deified by the Emperor after drowning in the Nile, is depicted as the Egyptian god Osiris. This type of statue served as the model for the fountain constructed in 1808 in the rue de Sèvres, Paris (below).

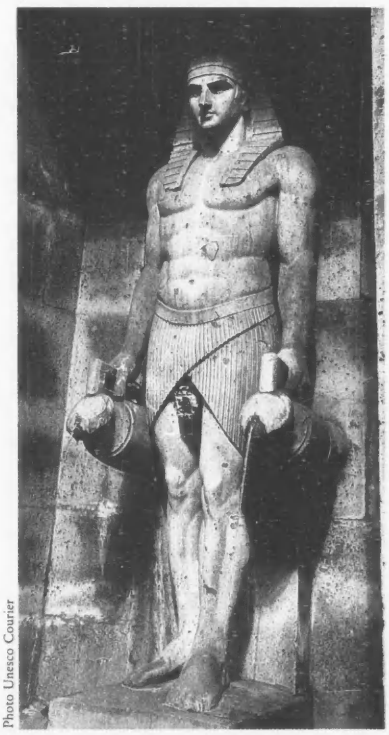


Photo Unesco Courier

not supplant them: it is the business of scholars, not artists, to attempt to recreate ancient civilizations totally and accurately.

In the twentieth century a number of factors, not all new, fostered a greater knowledge and appreciation of ancient Egypt and its art: archaeological discoveries (especially Tutankhamun's tomb); exhibitions of Egyptian art, some of which, like the Tutankhamun finds, have inspired Egyptian revivals in various areas; increased tourism to Egypt; more mass education; and an enhanced Western respect for non-Western art. As in the nineteenth century, Egyptian art continues to influence serious architects, artists and designers in manners other than slavish imitation.

However, other aspects of ancient Egypt's culture, real or imagined, continue to fascinate and influence the West. In fact, even before the great age of commercial motion pictures, plays, operas (especially *Aida*), historical novels, and fantasy and horror novels (Egyptian themes start in the nineteenth century, well before the "curse" of Tutankhamun's tomb was world news) gave some version of the culture to the public. Advertising and packaging for a variety of products, particularly cigarettes and beauty products, also have had their influence.

Both symptom and cause of interest in ancient Egypt, Hollywood and its allies have, from the beginning, used spectacles based on Egyptian themes to attract a wider audience, once again with varying degrees of historical or artistic accuracy. Other important influences on popular conceptions or misconceptions of ancient Egypt and its art are television, American comic books (not always aimed solely at children), and their more sophisticated French counterparts. A number of the latter dealing with Egypt combine impressively accurate drawings of modern Egypt and its ancient monuments with equally impressive Egyptianizing fantasies.

The mass media, heirs not only to early Hollywood but also to the works of the eighteenth and nineteenth centuries, perpetuate old and new myths about ancient Egypt such as its descent from Atlantis, the influence of beings from outer space, and "pyramid power".

An impressive recent example of Egyptianizing in popular media are the poster and cover for the record album *Powerslave* by the group Iron Maiden. Its design would have been impossible without the temples of Abu Simbel, widely publicized by Unesco's campaign to save the monuments of Nubia. The image, however, is not really Abu Simbel, but rather a theatrical Egyptianizing fantasy evocative of many popular associations of Egypt in the modern mind.

One thing seems certain: ancient Egypt and its art may come to be better understood and appreciated, but the land of the Pharaohs, of which the ancient Greek historian Herodotus said "more monuments which beggar description are to be found here than anywhere else in the world", will continue to be a source of many wonders and fantasies only somewhat reflective of ancient reality. ■

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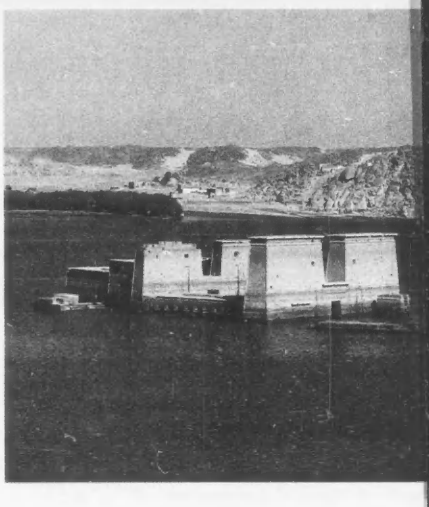


Photos Unesco/Alexis Voronzoff

From the Nubian campaign to the Library of Alexandria

Unesco and the ancient Egyptian heritage

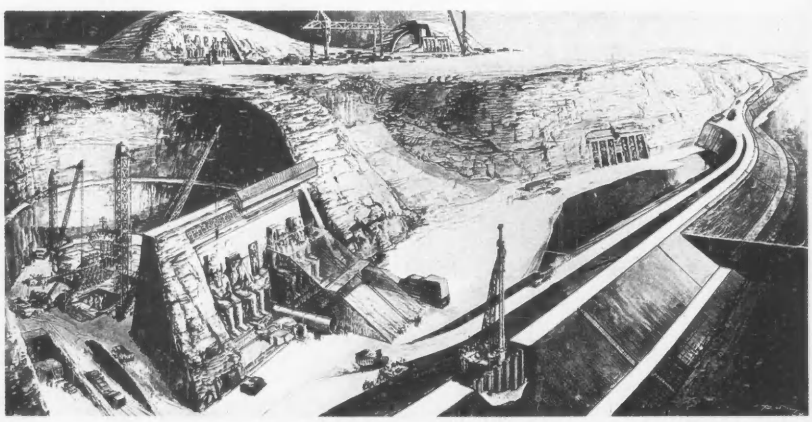
BY GAMAL MOKHTAR

THE Campaign to Save the Monuments of Nubia was the most spectacular demonstration of Unesco's concern for the legacy of ancient Egypt, and its success was the most striking example of international understanding and world solidarity in the field of cultural co-operation and the preservation of the heritage.

When the Egyptian Government began to study a project for building a High Dam to the south of the city of Aswan in order to develop and modernize the country's economy and decided to execute the project in 1954, it became apparent that Egypt and the Sudan had a major cultural problem on their hands: dozens of temples and archaeological sites and areas in Nubia were in danger of being submerged by the waters of the vast artificial lake that would be formed behind the High Dam. The lake, which would be 25 kilometres wide in some areas, would extend over 300 kilometres up the Nile Valley in Egyptian Nubia and some 200 kilometres into Sudanese Nubia.

Two examples indicate the scale of the problem. The first concerns the two temples of Abu Simbel, 270 kilometres south of Aswan. The base of the larger temple stood 124 metres and that of the smaller temple 122 metres above sea level. The temples lay upstream of the old Aswan Dam, which had been constructed around the turn of the century, but as the water level of the reservoir created by this dam never exceeded 121 metres, no part of the two temples was ever submerged by its waters. After the construction of the High Dam, however, the water level would rise to 182 metres, exceeding the highest level reached by the waters of the old Aswan Dam by 62 metres and submerging the two temples completely.

The second example is that of the temples which stood on the island of Philae, 104 metres above sea level to the south of the old Aswan Dam and to the north of the High Dam. The Philae temples were submerged almost totally by the waters of the old Aswan Dam most days of the year. However, after the construction of the High Dam (whose waters would not directly affect these temples, as they were located downstream) the water level of the old reservoir would drop and fluctuate daily between 102 and 110 metres in the process of generating electricity. In other words, the water would only partially inundate the temple walls, but the fluctuating water level



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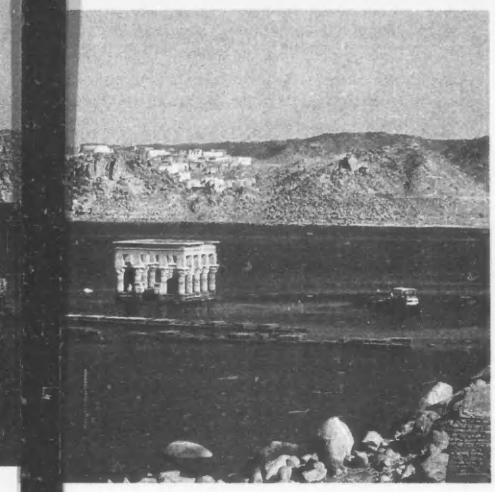
The project to dismantle the two rock temples of Abu Simbel and to re-erect them at a new site with the same orientation as before, but 64 m higher and 180 m further inland, was one of the most spectacular achievements of the Campaign to Save the Monuments of Nubia launched by Unesco in 1960. Artist's conception of the salvage operation (right) shows the Great Temple with its seated colossi and the Small Temple beyond it, both protected from the waters of the Nile by a cofferdam (foreground). The rock has been excavated above and behind the Great Temple to enable dismantling of the temple rooms. Far right, the temples re-erected at the new site, out of reach of the water. Two great concrete domes with overlying rock recreate the original appearance of the surrounding area. Work was completed in 1968.



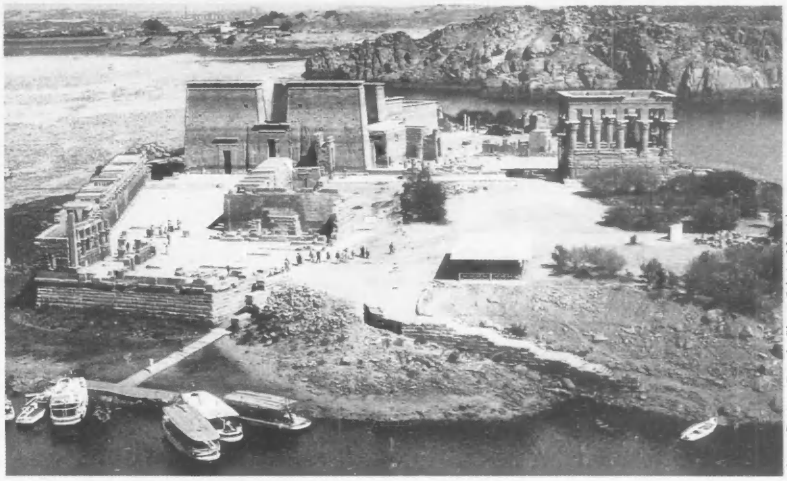


Photo © Hans Petzelt, Photo Schaia, Munich

would pose a more serious threat to the stonework of the temples than their total and permanent submersion.

The High Dam project thus confronted the two governments with a major responsibility to the land of Nubia, which had had strong links with Egypt throughout its history, especially during the Pharaonic period. It had therefore been the scene of major architectural activity, particularly the construction of temples, fortifications and castles for the protection of trade routes and the maintenance of peace. Cities, cemeteries and tombs were built in various periods, and innumerable quantities of rock stelae, carvings and inscriptions had survived, not to mention all the records of the past that still lay buried.

The Egyptian Government therefore approached Unesco on 6 April 1959, requesting its active material, technical and scientific assistance in the design and execution of projects to save the monuments of Nubia. Such a step was warranted by the scale and costliness of the task and also by the fact that the monuments were part of the universal human heritage and hence a matter of concern to the world as a whole. Moreover, it was felt that Unesco had a major responsibility for preserving and safeguarding the world heritage and was the only international organization capable of raising the financial support and rallying the specialists and technicians that were needed from all over the world. A few months later, the Sudanese Government submitted a similar request to Unesco.

Unesco responded to these requests by launching two major appeals. A first general appeal was made by the Director-General of Unesco on 8 March 1960 and a second, concerned more specifically with the need to rescue the temples of Philae, was made on 6 November 1968. In both appeals, the Director-General called on governments, public and private bodies and all potential sources of aid to provide financial, technical and scientific assistance for the purpose of saving the monuments of Nubia.

The Campaign to Save the Monuments of Nubia began with the following archaeological activities:

1. Comprehensive recording of the monuments of Nubia: this was meticulously carried out by the Documentation and Study Centre for the History of the Art and Civilization of Ancient Egypt in Cairo, which had been established in 1955 as a result of a contract between Unesco and the Government of Egypt providing for co-operation in documenting Egyptian monuments with their inscriptions and carvings. The Centre was set up and financed by Egypt, with Unesco providing the experts and equipment.

2. An archaeological survey of Nubia to make an inventory of all the archaeological areas and sites that would be inundated and to identify areas that had not yet been excavated. Over seventy archaeological missions from twenty-five countries then carried out excavations in those areas of Egyptian and Sudanese Nubia that were to be submerged.

▲ **The rescue of the temples which stood on the island of Philae was the final stage in the Campaign to Save the Monuments of Nubia threatened by the waters of the Aswan High Dam. The temples, dedicated to the cult of Isis, are shown still almost intact in the 19th-century engraving above left. They became endangered in the early years of this century, when the first Aswan Dam was built downstream from them. After 1934, when the dam was raised, the island and its temples were submerged for much of the year. Photo taken in 1972 (above centre) shows the Temple of Isis and the Graeco-Roman "Kiosk" of Trajan partly under water. In 1960, the construction of the High Dam threatened to submerge the temples permanently, and a decision was made to dismantle them and move them to the neighbouring island of Algikia, which was landscaped to resemble Philae. Work began in 1972 and was completed in 1979. Above, the monuments reconstituted on their new site.**

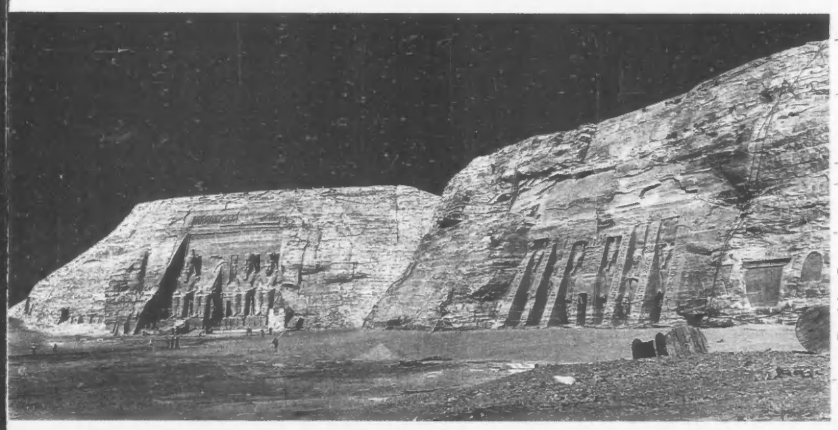


Photo Unesco/Dominique Roger

3. Rescue work on over twenty temples in Egyptian and Sudanese Nubia, including:

The two temples of Abu Simbel, which had been hewn in the rock. Many proposals were submitted and extensive field studies were carried out. In the end it was decided to dismantle the two temples and rebuild them inside soaring artificial domes erected at the same site, but on ground 60 metres above the original location. The temples were inaugurated at their new location in 1967.

The temples of Philae. Several proposals were submitted for this rescue operation and the project finally selected was carried out by Egyptian and Italian companies. It involved dismantling the temples and reassembling them on the neighbouring island of Agilkia after preparing and levelling the terrain. The completion of the project and the successful conclusion of the campaign to save the Nubian heritage were marked with great celebrations in 1980.

In addition, over twenty temples, many chapels, rock stelae and carvings also had to be dismantled, transported and reassembled on higher ground, safely above the waters of the new reservoir, Lake Nasser. This rescue work was carried out by the Egyptian Department of Antiquities, with the exception of the Temple of Kalabsha, which was rescued by the Federal Republic of Germany,

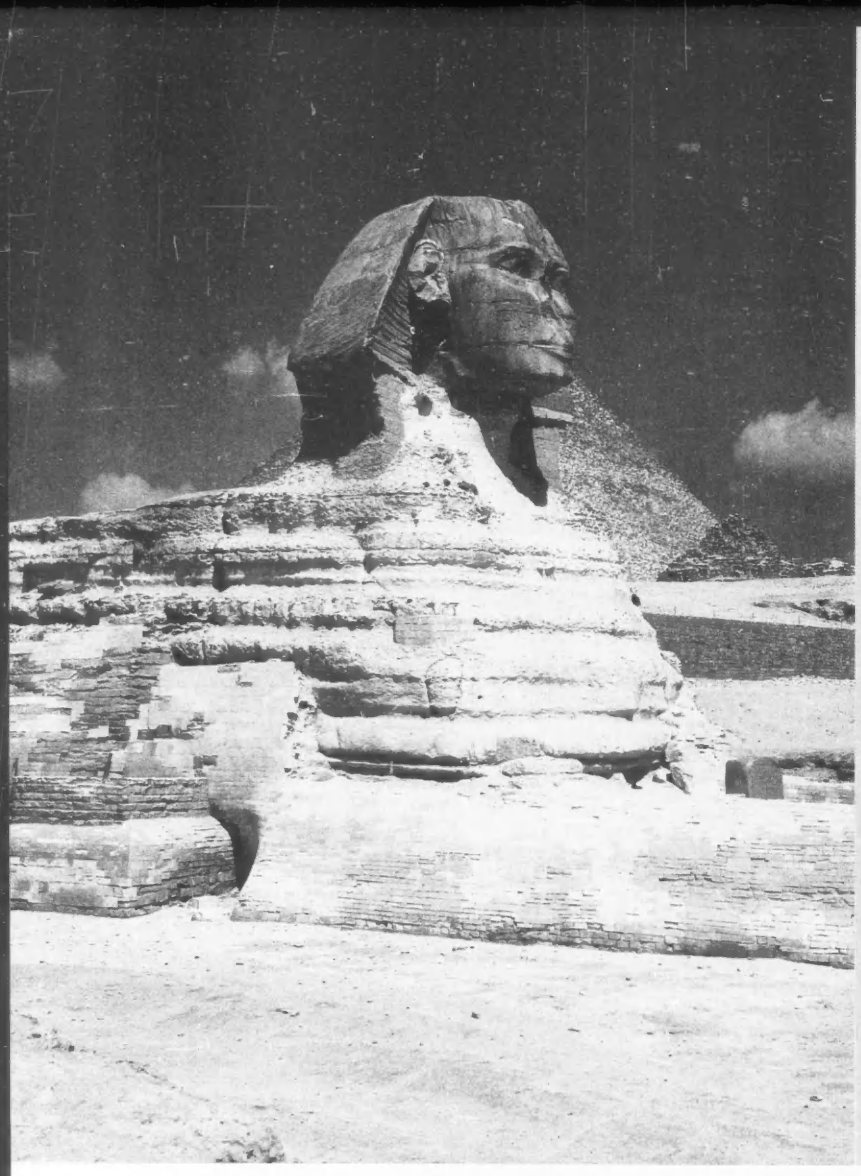


Photo Unesco/Alexis Vorontzoff

The Great Sphinx threatened

◀ With its human head and the body of a recumbent lion carved out of the rock beneath the Great Pyramids at Giza, the colossal great Sphinx is a portrait statue of the Pharaoh Khephren (c. 2520-2494 BC), whose tomb it guards. Today the Sphinx is threatened both by erosion due to the climate and by the rising level of extremely saline ground-water. In February 1988, a block of stone weighing almost 300 kg fell from the right shoulder of the monument and broke. The Egyptian Minister of Culture has appealed to Unesco for help in saving the Sphinx, which with the rest of the Giza site is inscribed on the World Heritage List of cultural properties of outstanding universal value. The Director-General of Unesco, who has recently visited the site and noted the extent of the damage, has expressed Unesco's readiness to co-operate in the restoration of the Sphinx.

and a section of the Temple of Amada, which was rescued by France. The latter was moved on rails to safe ground near its original site.

The antiquities of a region that had important ties with Pharaonic Egypt were thus saved for posterity. For thousands of years they had stood as a magnificent symbol of human achievement in an isolated, barren and inhospitable land, and they now provide a unique example of what modern science and technology can do to save the heritage of our forebears.

Saving the monuments of Nubia was a major landmark in the history of Unesco, for it involved the Organization in the most ambitious cultural and scientific operation ever attempted in human history. The unqualified success of the campaign was the result of intensive co-operation among all the parties concerned over a period of almost twenty years. Victory was achieved through the firm determination of the Governments of Egypt and Sudan to save their cultural heritage, the generosity of Unesco's Member States, and the enthusiasm and skill of all those who took part in the rescue operation itself, particularly the archaeologists, architects, engineers and experts who joined forces under Unesco's aegis.

Unesco has contributed to the presentation and enhancement of Egypt's ancient heritage in other fields, including:

- the improvement of museum services, particularly the Egyptian Museum of Pharaonic Antiquities in Cairo;
- the conservation and restoration of ancient Egyptian and Islamic archaeological sites such as the Pyramids of Giza, Luxor and several Islamic sites in Cairo;
- the inclusion of a number of Egyptian antiquities on the World Heritage List;
- assistance in the publication of the Coptic manuscripts of Nag' Hammadi, known as "The Gnostic Codices";
- the launching in 1982 of an International Campaign for the Establishment of the Nubia Museum in Aswan and the National Museum of Egyptian Civilization in Cairo and provision of all the financial, technical and informational assistance needed to achieve the goals of the campaign. The purpose of the National Museum is to present the civilizations of Egypt from pre-history to the present day. The exhibits of the Nubia Museum will cover the geological, geographic, ecological, ethnographic and artistic features of Nubia and every aspect of its history and archaeology. The Museum will also contain a research centre to study all matters related to Nubia and its ties with Africa, for it was a major passage-way for the transmission of cultural influences between the Mediterranean and Africa.
- Support for the project to revive the ancient Library of Alexandria, a store of learning that served the scientists and philosophers of the Greek world at a time when Alexandria was a world centre of culture and science. Unesco has called for contributions to cover the building costs and for donations of basic equipment, and has offered help in planning this long-term project, which will be completed at the end of the century.[1] ■

1. The Library of Alexandria project will be the subject of an article in the November 1988 issue of the *Unesco Courier*. *Editor.*

GAMAL MOKHTAR, *Egyptian archaeologist, is a former Director of his country's Service of Antiquities. The author of many publications on the history of ancient Egypt, he was the editor of* Ancient Civilizations of Africa *(1981), Volume II of Unesco's* General History of Africa. *The Editors of the* Unesco Courier *would like to thank Dr. Mokhtar for his help in the preparation of this issue.*

*A **must** for 1989 . . .*

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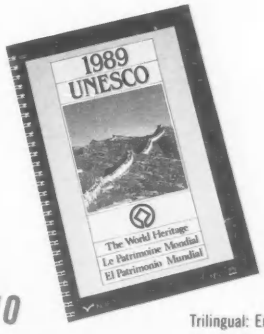

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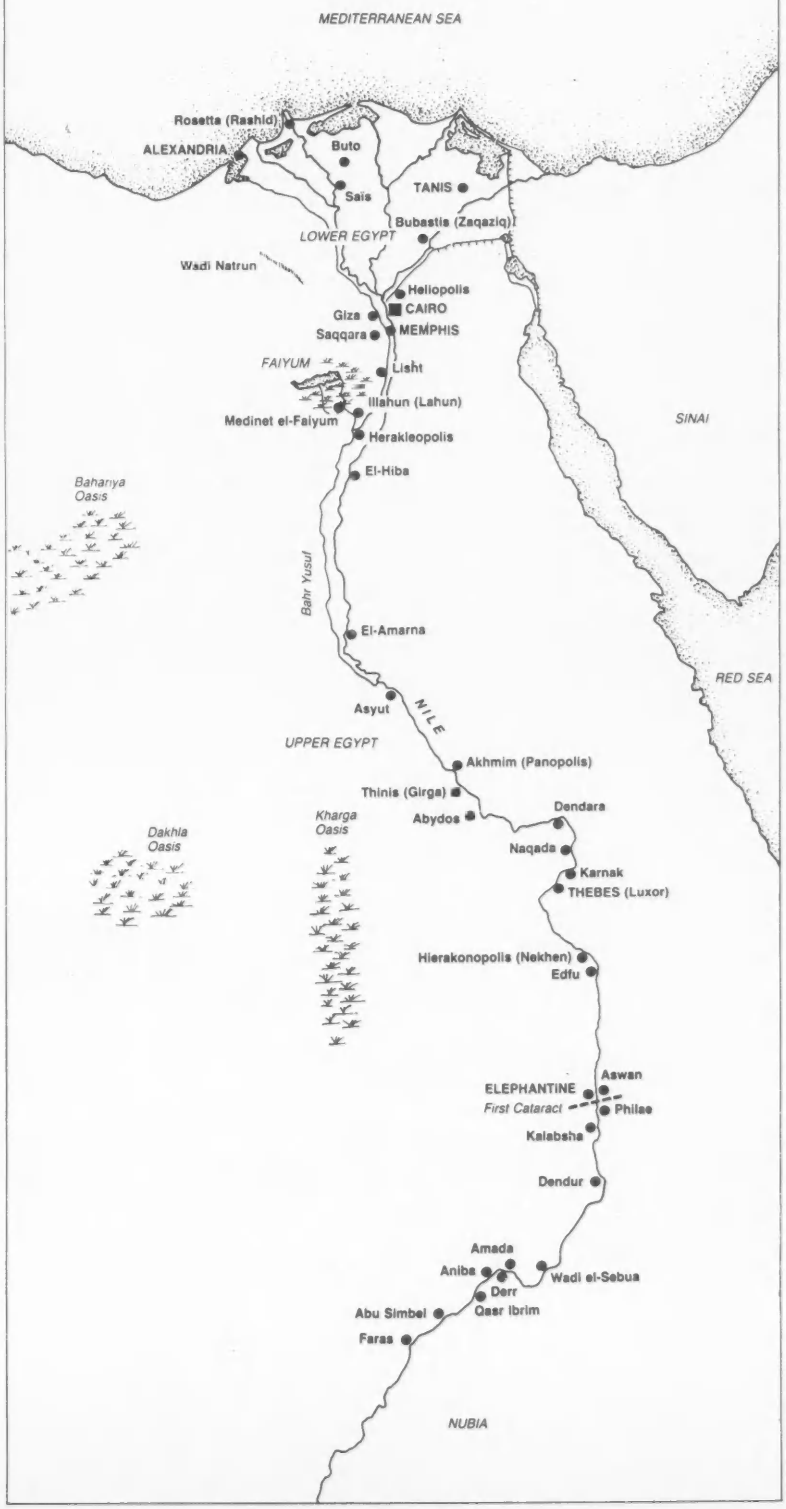
Main sites of ancient Egyptian monuments



The Courier

A window open on the world

Published monthly in **35 languages** by Unesco, The United Nations Educational, Scientific and Cultural Organization
A selection in **braille** is published quarterly in English, French, Spanish and Korean

Editorial, Sales and Distribution Office:
Unesco, 7 Place de Fontenoy, 75700 Paris.

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Subscription rates
1 year: 90 French francs.
Binder for a year's issues: 62 FF

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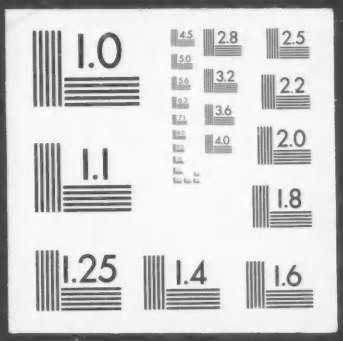
All correspondence should be addressed to the Editor-in-chief in Paris

Imprimé en France (Printed in France)
Dépôt légal : C1 - Septembre 1988
Photogravure-impression : Maury-Imprimeur S.A., Z.I. route d'Etampes, 45330 Malesherbes.

ISSN 0041-5278
N° 9 - 1988 - OPI - [illegible] - 1 - 460 A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